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THE GUN :
AFIELD AND AFLOAT



ROCKETTERS.

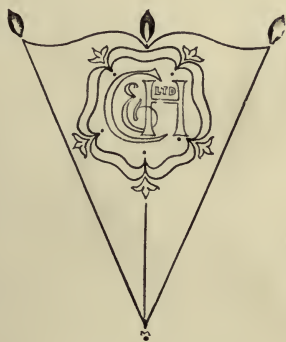
THE GUN: AFIELD AND AFLOAT

BY HENRY SHARP

AUTHOR OF
'PRACTICAL WILDFOWLING,' ETC.

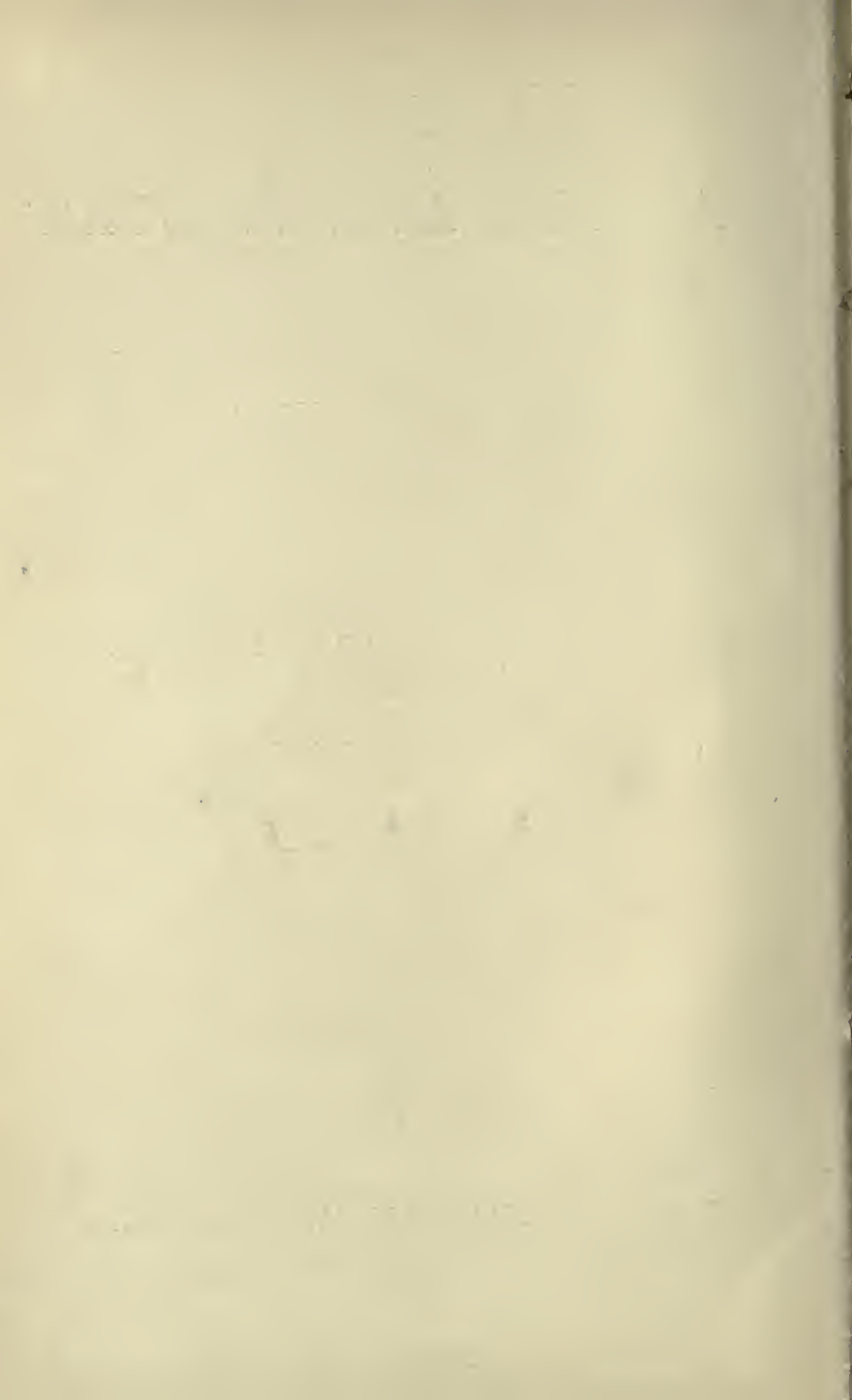
WITH THIRTEEN FULL-PAGE PLATES
AND UPWARDS OF THIRTY ILLUSTRATIONS IN THE TEXT

BY
HERBERT SHARP



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INTRODUCTION

THE Gun: Afield and Afloat has been written in the hope that it may prove helpful to an ever-increasing army of young shooters by affording precise information respecting the guns to be used, the game to be shot, and the various methods of shooting as practised in this country. This book is offered as the result of the author's thirty years' experience with guns, and in the shooting of game and wild-fowl, and whilst elementary in all else, it does not aim to impart knowledge as to the mere handling of the gun, proficiency in that direction being only attainable by practice, not by precept.

The well-worn truism that "everybody must have a beginning" is just as applicable to shooting as to hunting, or, for that matter, to all branches of sport; and all being mindful of first attempts, due allowance will be made for others on their first entry into the field. Still, the shooting novice must bear in mind that human patience is limitable; he must not presume too much upon the forbearance of his friends, remembering above all else that the airing of incapacity in the shooting field is less pardonable than would be his raw efforts in certain other pursuits. Old hands may derive considerable pleasure from watching the efforts of the tyro in

taking his own line across country in a good run with foxhounds ; in handling the tiller of a yacht ; in wielding the oar, or the billiard-cue ; in fact, in all situations where the field is wide and the scope for untrained effort is more or less safe and unbounded. All the same, the beginner will be wise in laying to heart the fact that blunders which might be tolerated or readily excused elsewhere cannot be lightly regarded in the case of the man with a gun in his hand. The gunner's education, in so far as handling the gun and the acquirement of a generally safe comportment therewith, should certainly be completed before he takes the field in the company of other shooters, for it is inexcusable that a man should cause anxiety and destroy the sport of his neighbours, solely through lack of knowledge as to how he should comport himself.

Thorough education and training are as essential towards insuring the proper handling of the gun as they are in all other directions. There is no royal road to the art of shooting, neither any such thing as a born shot—albeit it is indisputable that certain individuals become proficient in the handling of the shot-gun much more readily than do others. The man anxious to become a good and safe shot should be aware that an acquaintance with the maxims and precepts, as also the acquirement of a certain amount of skill in the manual portion of the art of shooting, do not comprise the whole of the necessary education. There may, for instance, be various idiosyncrasies of temperament to overcome, for these, unless mastered, might for ever preclude the possessor from the enjoyment of that enviable title, a safe shot. Now and again, though happily such cases are somewhat rare, persons are to be met with who

labour to such an extent under the excitement of sport as to become for brief periods more or less irresponsible for their actions. Obviously enough, thorough schooling and discipline are needed in such circumstances, otherwise accidents may arise.

Few novices would have the assurance to pick up a cue to play an even game at billiards with a skilled player ; neither would the mere beginner in music be likely to accompany his own singing with any instrument, not even the banjo, in the presence of critical musicians. It seems inconceivable, therefore, that men can be found who, not having shot half-a-dozen times in their lives, yet have the assurance to enter the field with seasoned men and try to make believe they are veterans at the game. The terms vanity and foolishness are not sufficiently strong to convey a proper impression respecting such deceit. There is, therefore, much cause for thankfulness that such cases are becoming more and more rare. This pleasant change is in some degree attributable to the establishment within recent years of various schools for shooting where all safe and proper methods of handling and carrying the gun are taught, and every conceivable kind of shot may be practised. Undoubtedly these training grounds for shooters are capable of much good, and the novice is certainly not alone in having much cause to rejoice at their establishment. At these shooting schools the beginner may become more or less fitted to take the field, whilst the seasoned gunner may have facilities accorded him for occasional practice, without which so few people are able to keep themselves up to their proper form.

The tendency to apply the term gunner to shooting men is much more apparent now than formerly. And,

really, we cannot doubt the wisdom of such application, for, of a truth, the sportsman of to-day is much more of a gunner than were his predecessors in the shooting field. A knowledge of the gun, the intricacies of hammerless actions, of single triggers, of barrel boring, of the behaviour of nitro compounds, cartridge loading and shot velocities, is much cultivated in these times; thus the game-shot becomes more than ever a gunner. But this does not quite convey the whole of what is implied by the modern term gunner, for the shooting man—"shooting man" also is modern, and it, too, is a distinctly good term in this connection, as, strictly applied, it conveys much the same meaning as "gunner"—has developed more and more into the mere gunner. A clearly-defined line of demarcation might be drawn between sportsmen of the old school and sportsmen of the new. The former take as much pleasure in the searching for and circumventing as in the actual killing of their game. With the latter these are quite secondary considerations, for they expect to have the game brought up to them; thus in the latter case the handling of the gun, the actual shooting, is the paramount consideration, and the hunter's true instinct remains largely uncultivated.

The remarkable improvements made in guns and explosives during the past quarter of a century are to some extent accountable for the increased interest taken in gunnery, and for the fact that in this particular direction the education of the sportsman has considerably progressed. But this, perhaps, is not the real reason why the sportsman of to-day shines more as a gunner than a hunter of game. The chiefest cause in all probability is to be found in the altered conditions of sport, the modern tendency being, as remarked, in

the direction of having the game driven to the guns rather than that the guns should go in quest of the game. Thus precision and quickness in handling the gun have assumed greater importance in the estimation of the gunner of to-day.

Many ardent advocates of both the gunner's and the hunter's form of shooting are to be found, and so long as they remain fairly tolerant one of the other, every one will wish that they may derive all possible pleasure from their sport, in whichever way it is pursued. In America and other countries, shooters are commonly spoken of as hunters, and although the term does not find favour with the sportsmen of this country, it, nevertheless, is sufficiently applicable to the followers of the old-time methods of shooting. Of a truth, the old-school sportsman derives more than half his pleasure from the search for his quarry, the working of his dogs, and in pitting his intelligence and experience against the wary cunning of wild game. And who will deny that there is not as much pleasure derivable from shooting over a brace of well-broken dogs, from the making a moderate-sized bag of grouse or partridges in this way, as from killing treble the quantity of game by means of driving? Few sensations are more exhilarating than the going out upon the hills on a bright morning in early December, when there is just a suspicion of frost in the air, and the returning with three or four couples of woodcock, having worked hard for them. Then, too, in November, when game shelter becomes scanty, and partridges get wild, the dropping a clean-killed right and left, as the birds rise swiftly on the wing fully thirty-five yards away, is an accomplishment of which any gunner may feel satisfaction. The making a bag of some well-nigh

inaccessible snipe on a marsh devoid of covert is also most pleasing to the keen sportsman. On the other hand, satisfaction quite as real, if perhaps somewhat more fleeting, is felt by the gunner concealed in his butt, as the grouse are seen coming end on to him, or when the cry "Mark over" rings out from the line of beaters as the partridges rise from the stubble and make straight for the guns. The excitement derivable from the shooting of driven game may not be so long-lived as is that experienced in some other forms of sport; all the same, it is at least as keen while it lasts. Probably it is keener, for the sight of the birds streaming overhead, and of others curling up in mid-air as cleanly killed they tumble headlong to the ground, is of itself a most fascinating spectacle, and one of which even the quiescent onlooker does not readily tire.

On those sporting estates where the rearing of game is carefully attended to, extraordinarily heavy bags of game have been shot within recent times. Two most prominent factors in the making of heavy bags are the gun and the gunner. The gun is ranked first for the simple reason that without the improvements that have been effected in the mechanism and ammunition of the shot-gun within the memory of many living sportsmen, the killing of so many hundreds of grouse, pheasants, or other game in one day would be an impossibility. For this work the gun must be as nearly perfect a death-dealing instrument as human hands and brains can turn out. It must be well adapted for the work in hand, and to the individual requirements of the sportsman as regards weight, fit, and so forth; the trigger-pulls, lock-work, and other mechanism must move so smoothly, and its shooting prove so regular, that with suitable

ammunition there is not more than a fractional difference in the velocity of the shot pellets or their manner of flight. For these specially heavy days of sport the charges of powder and shot may well be reduced somewhat below those ordinarily employed, provided always that the shooter is not likely to be unduly handicapped in the matter of length of range or width of killing circle by such reduction. Some slight reduction is perhaps advisable on the score of personal comfort ; for few people, probably, will be capable of undergoing so severe a strain as is entailed in the firing of several hundreds of heavily-loaded cartridges in the space of a few hours without suffering more or less severely from unpleasant effects produced by the recoil and concussion.

With respect to the part played by the gunner in the making of these heavy bags of game, it is essential that he should be sound in "wind, limb, and eyesight." Moreover, he must be in good training, and be physically capable of withstanding the shock and strain caused to body and brain by the firing of several hundreds of cartridges in quick succession. Many people are interested in learning as to the figures comprising these extraordinary bags of game, but few in all probability have given more than mere passing thought to the enormous strain entailed upon the gunner in raising the gun to his shoulder, and in receiving the blow and shock imparted by the explosion of the charge. If we assume that 1500 cartridges were fired by Lord Walsingham on that memorable day, August 30, 1888, when he shot 1070 grouse to his own gun, it will probably be tolerably correct to infer that in accomplishing this, the gun, weighing, say, $6\frac{3}{4}$ lbs., would be raised to the shoulder some eight hundred times. Taking the lift

each time at $2\frac{1}{2}$ ft., we arrive, by simple calculation, at the fact that Lord Walsingham raised a weight of about $2\frac{1}{2}$ tons a height of $2\frac{1}{2}$ ft. during that day's shooting. But if we consider the amount of shock and energy of recoil that a shooter's body is called upon to absorb or check in the course of a day's shooting such as this, the figures will prove still more startling. If, therefore, the energy of the recoil of each one of the 1500 cartridges is placed at 30 ft. lb., which it might well be, seeing that a heavy charge of black powder was used by the gunner on the day named, we have the astounding total of 45,000 ft. lb., which implies that an energy equivalent to the lifting of 20 tons to a height of 1 foot has to be taken up or checked by the gunner's body in the course of a day's shooting such as that recorded. Altogether a most wonderful performance—a performance in which bodily strength and endurance are worthy to rank with the remarkable degree of marksmanship displayed. There are two things deeply engrafted upon the hearts of Englishmen, a love of sport and of salt water. The liking for the latter is indissolubly bound up in, is in fact part and parcel of, our inborn love of freedom, for where is such freedom to be found as upon the open sea? To cruise about in one's own craft, whether it be a 15-foot open boat or a handsome 30-ton yacht, is to reach the acme of untrammelled freedom in this country. On the open water there are no notice-boards conveying the intimation to "Keep off the grass," "Trespassers will be prosecuted," nor even that dread threat "All dogs will be shot." Thus the man in the boat throws dull care to the four winds of heaven—or, at least, that one blowing at the moment—and feels that as a true British subject and taxpayer he is practically monarch

of his immediate environment for the time being. As being myself a keen wildfowler, wildfowlers will ever have my keenest sympathy and fullest consideration. In their service I have endeavoured to convey in this work instructions respecting the best guns and ammunition to use for the shooting of wild-fowl ashore and afloat, as also for the general prosecution of the sport. Still, having given somewhat minute directions as to punt-guns, gunning-punts, and the shooting therefrom in a previously published book, *Practical Wildfowling*—which I am pleased to add was favourably received by both press and public, and so has emboldened me to proceed with this new book on shooting—I have in the present work refrained from specialising on those points.

In these times of new guns, new powders, and many other innovations connected with the sport of shooting, it becomes more than ever imperative that sportsmen should move with the times, and take due note of the movements around them. Otherwise, they will be badly left behind by those shooters keeping themselves well posted up in the march of events. Vastly important as are the improvements effected within recent years in the matter of guns and ammunition, a glance around at once reveals the fact that the makers and purveyors of these important items in the equipment of the shooter have themselves kept pace with these improvements and the general trend of events. Assuredly, the foremost gunmakers and powder manufacturers of this day bear but slight resemblance to that same class of tradesmen supplying the needs of sportsmen fifty years ago. The leading gun and ammunition makers of the present time have not been slow to discover, that in order best to keep

pace with the requirements of their customers they themselves must acquire a knowledge of the field as well as of their craft. As a consequence, several of the most skilled and clever of present-day gunmakers are thoroughly efficient sportsmen, trained by frequent practice in all the arts of shooting in the field. This, certainly, is as it should be, for a gunmaker familiar with all phases and conditions of shooting is likely to prove to the sportsman a far more valuable ally than will the gunmaker who spends most of his wakeful hours at the bench or in the sale department. This, perhaps, might not apply so forcibly were it merely a question of gunmaking; one or two other matters beside the mere making of guns—for instance, the due fitting of the customer with arms that he can handle, and that are well adapted for the work he finds for them to do, as, also, the question of suitability of loads, and cartridge-loading—are dominant factors in insuring success under the conditions of sport ruling in this twentieth century. And, surely, the gunmaker who has practical field-knowledge respecting the requirements of the sportsman is likely to prove an apt counsellor.

My acknowledgments are due to the Editors of *The Field*, *Country Life*, *Country Sport*, and *The Shooting Times* for kindly granting me permission to make extracts, here and there, from my contributions to their respective journals for the purposes of the present work.

HENRY SHARP.

London,
August 1903.

THE GUN: AFIELD AND AFLOAT

SECTION I

ACCESSORIES

CHAPTER I—GAME GUNS

THE evolution of the shot-gun has proceeded apace during the past half-century. A space of little more than thirty years has witnessed the introduction of the breechloading, the hammerless, and the single-triggered double gun. Mighty strides, truly, are these in the march of improvement. Whilst fully alive to the several advantages, in the way of celerity of movement, ease of manipulation, and certainty of discharge, possessed by the most approved types of the modern shot-gun, it is possible that shooting-men of the day do not sufficiently recognise one other boon that has been conferred upon them by the gun-makers. This is in the way of safety, and I think few will be inclined to dispute the statement when I aver that gun-makers of these times have put us in possession of arms far more safe to use than any the world ever saw before. Our sporting forefathers ran the risk of blowing off hand or head when loading their guns at the muzzle. The breechloader most effectually secures immunity from this danger.

The fact that the gun is a lethal instrument should never be lost sight of, and, above all else—killing power, quickness, handiness, and so forth—it is incumbent on those who shoot in company to see to it that the guns they carry shall in no respect be a source of danger to those about them. The gun with outside hammers dies a hard death ; still, in course of time it must inevitably become obsolete. Already it has of necessity to be relinquished in those quarters where heavy bags of game and rapid firing are the order of the day. With this form of gun there remains the risk of a slip, particularly in cold or wet weather, whilst lowering the hammers with moist or benumbed fingers—a fruitful source of danger, and one that has caused several accidental discharges in the shooting-field. Thus the gun with its hammers on the outside of the lock-plates is in this respect a less safe weapon to handle and use in the field than is the improved type of gun which has its hammers inside the lock-plates, the so-called hammerless gun, in fact.

It is intended that this recommendation of the hammerless action should apply only to those guns which are of sound construction and thoroughly reliable in every respect. Hammerless guns of faulty design or defective workmanship are things as much to be avoided as are rattlesnakes. Of two evils, I would far rather handle or be in the company of those handling—a distinction with a considerable difference, by the way—faulty hammer guns than in the presence of others using defective hammerless arms. With the former the state of the locks can, at least, be seen or felt, but with concealed hammers or tumblers and an inefficient “safety” bolt there is bound to be trouble sooner or later.

Save for this serious objection that wet hammers may slip from under the thumb of a benumbed or highly-excited sportsman, a well-constructed hammer gun with rebounding locks is a remarkably safe and trustworthy weapon.

As these remarks are not presented with the intention to instruct veteran sportsmen, but are written with a view to the needs of the tyro, and to help less experienced sportsmen in making choice of a weapon suitable for their sport, it will not be necessary to offer an apology for the accompanying simple formulæ.

Many important qualifications are to be looked for in a first-class gun ; of these the following may be enumerated ; and these remarks, by the way, apply to both game and wild-fowl guns :—

Appearance.—This is placed first for the simple reason that unless a gun is built on good and pleasing lines, with regard to shape and contour, no one with half an eye to beauty will take to it, and unless the shooter really fancies his weapon he will not be likely to make with it his best display of skill. A fair but not elaborate amount of embellishment in the way of engraving or other ornamentation is permissible on a game gun, and to a less extent on a wild-fowl gun. Old writers on shooting solemnly warned the prospective gun-purchaser against engraving, alleging that it was merely a cloak for bad workmanship, and, moreover, harboured dirt and moisture, so engendering rust. With guns as now turned out by the best makers in London or Birmingham this warning is inapplicable. With ordinary care in the cleaning of such guns, which have lock-plates, action-body, and the surfaces upon which engraving is usually placed properly case-hardened, the prospect of appreci-

able damage from rusting during the average shooter's lifetime is very slight.

Quality.—If the materials are not good in every part there is the ever-present risk of a breakdown, which as likely as not will occur at a critical time and when the gun can ill be spared. Without good quality the gun cannot be made sufficiently strong, save at the cost of increased weight and bulk, both of which, of course, interfere with the ease and comfort of shooting. Under this heading the question of safety naturally falls, it being so largely dependent upon the soundness and good quality of the materials of which guns are built.

Workmanship.—It is highly essential that this should be thoroughly good, having regard to the life of a gun, as also its safety in working. It cannot be doubted that with many kinds of ammunition in use at the present day a gun is subjected to varying shocks and strains such as were scarcely realised in the philosophy of those responsible for the manufacture and the proof of earlier forms of the shot-gun. A gun of ill construction cannot wear well, for in the first place the least shake in the working parts is rapidly aggravated by the concussion on explosion; and in the second, the slightest looseness permits the entry of moisture to set up erosion, so that between the two evils the gun is soon rendered unfit for use. The locks must work smoothly and well; the trigger-pull must be even and not too prolonged, and it is imperative that the whole design and workmanship of the lock mechanism and safety-bolts should absolutely insure against risk of accidental discharge. The risk of accident from such cause is fully apparent, but, apart from this, with the heavy recoil of wild-fowl guns this jarring off might be attended with most unpleasant

consequences to the involuntary firer, unless he were quite prepared to take up the recoil. This recalls a rather sharp lesson once taught me, and as it exactly serves to illustrate the warning here conveyed, I may perhaps be excused for mentioning it. A certain eminent gun-maker had sent me a double 8-bore to test and express an opinion upon. I took this gun with me on a wild-fowling expedition to the Outer Hebrides, and one morning went with it to get a shot at bernacle and grey-lag geese feeding upon some grassy islets in the tideway betwixt two of the main islands of the group. This gun had a new trigger arrangement which at that time had scarce emerged beyond the experimental stage. In the result I got more shooting that morning than was anticipated, for on pulling the trigger both barrels promptly went off together, and I got a badly-sprained thumb, several teeth loosened, and a terribly disconcerting shock generally. After all I was pleased to think that whilst not much could be advanced in favour of that particular pulling arrangement, volumes might be favourably expressed with regard to the ability of barrels and action to withstand the simultaneous discharge of, possibly, 200 grains of a nitro powder and something like five ounces of shot.

Simplicity.—The fewer the working parts the better, provided thorough efficiency is insured, as thereby the gun will be less likely to go wrong when in ignorant or careless hands, or even when manipulated with intelligence and care. Moreover, intricacy of mechanism does not conduce to cleanliness and freedom of working.

Stocking.—This vastly important work is too often clumsily performed. Nothing militates so much against freedom of action, and power to swing guns, and more

particularly heavy guns, with that promptitude and ease necessary to insure good shooting, as an ill-proportioned, unmanageable stock. Some 8- and 4-bores are positively unwieldy by reason of the amount of timber there is about them and the general awkwardness of their stocks. Greater strength is of course requisite in the stocks of guns used with heavy loads; still, the young tree occasionally doing duty as a stock is unnecessary if suitable well-seasoned wood is employed.

Balance.—This is far more essential to the ready handling of the gun, and to insure good shooting, than many people may be aware of. A well-balanced gun tries the shooter far less and assists much more to sustain his powers of marksmanship, his regularity of performance, through a long and tiring day, than an imperfectly-balanced gun.

Fit.—It has become more and more the fashion in recent years to measure sportsmen, accurately and scientifically, for their guns. This is accomplished by means of an instrument called a “try” gun having an adjustable stock and butt, which more or less accurately determines as to individual requirements in respect of length, bend, cast-off, and so forth of the gun-stock.

Shooting.—Unless the barrel-borer performs his part satisfactorily, the fitter, stocker, finisher, engraver, and the host of other workmen employed in the manufacture of a shot-gun and its ammunition will have laboured in vain. Barrel-boring, so far as shot-guns are concerned, is an inexact art, inasmuch as no absolute rule can be laid down as to the dimensions of bore required to secure certain results. With the introduction of choke-boring, whereby any requisite degree of closeness in shooting may be obtained, and also by the light thrown

on the subject of the shooting of guns by the target experiments conducted by successive editors of *The Field* newspaper and various independent experts, the art of barrel-boring has been greatly assisted. Therefore it is now not a difficult matter to obtain any pattern required within certain well-defined limits—pattern, in this case, being the display of shot pellets upon the iron plate or other target used for the purpose of testing the shooting of guns. The degree of closeness of pattern is a most important consideration. Undue thinness of pattern is to be avoided by reason of the fact that unless the pellets fly thickly enough the bird may escape between them. On the other hand, an extremely close pattern is not desirable for short-range work, as with very thick patterns birds will either be cut to rags or stuffed full of lead. Again, just as sportsmen vary in skill, so will it be necessary in some small degree to regulate patterns to suit the gunner. In far greater degree, however, is it necessary to regulate pattern according to the distance to be shot at—for we must hit in order to kill. If we were continually shooting our game at 40 to 45 yards, there would be strong encouragement to advocate the use of full chokes and patterns of 200 pellets and upwards in the 30-inch circle at those distances. As in all probability, however, 80 per cent. of the game shot in this country is killed at distances well inside 30 yards, sportsmen are well advised if they use guns which display patterns of from 120 to 150 pellets in the 30-inch circle at 40 yards range. And so, too, in wild-fowl guns the pattern must be proportioned to the distance and size of the object or objects fired at. Penetration, also, is an important consideration, for unless a gun gives a sufficient display of force, game and wild-fowl will be

killed in a slovenly manner, and its effective range will be considerably curtailed. Still, sportsmen of this day need have few apprehensions on this score, for with modern sporting explosives and suitably-loaded cartridges most guns will drive the shot with sufficient velocity to insure killing game at all reasonable distances.

Recoil.—Finally, there is the consideration of recoil, which, if excessive, tends more than anything to rapidly demoralise and put a man off his shooting. Recoil is ever present in greater or lesser degree; it varies in accordance with the weight of the charges fired and the amount of skill exhibited by the gun-maker in the boring and chambering of the barrels, as well, also, in the disposition of their weight of metal. Fortunately the checking or governing of recoil is a matter largely dependent upon the shooter himself. The load is the dominant factor, and in great degree upon his skilful regulation of this will his comfort in shooting depend.

In the early days of the hammerless gun much harm was wrought by the issue of several guns of this type that were faultily devised or imperfectly constructed. Thereby the universal adoption of this class of arm was much retarded, the sportsman's mind being considerably perturbed by the number of accidental discharges which occurred. On some early examples of the hammerless gun the safety-bolt was more or less inoperative, sometimes even to the extent of permitting the firing of the gun with the bolt on. A commoner source of danger with a defective bolt was that where it was permissible to shake or jar it out of position. One gun that I heard of had acquired the disconcerting, albeit less risky trick of automatically putting on the safety-bolt whenever the first barrel was fired. This movement

back to "safe" placed the shooter in rather an awkward predicament, and besides, was calculated to give rise to remarks that would otherwise have been unnecessary ; still, it is better, because safer, to have the bolt jar on than jar off. Other cases are on record where faulty hammerless guns have been known to go off when the safety-bolt was pushed back, and this, too, without the triggers having been touched. All these undesirable qualities are, however, thoroughly eliminated in the best makes of hammerless gun of this day, so that at length one is convinced that a really well-made hammerless gun is more to be desired than any type preceding it.

More than one generation of gun-makers has been fully alive to the fact that a single-triggered double gun would prove much handier and quicker in use than the two-triggered arm. In truth, many years ago, considerably more than one hundred firearms on this principle were planned and patented ; but although several successive generations of gun-makers have been theoretically alive to its advantages, the production of a thoroughly reliable double gun on the single-trigger system has been reserved to the gun-makers of our immediate time. One serious difficulty presenting itself in the initial stage of this recent endeavour to provide sportsmen with single-triggered guns was the premature discharge of the second barrel, caused either by the shooter himself or by the shock of the first discharge. Since that time, however, gun-makers have overcome these difficulties, and will now guarantee their single-triggered double guns safe against premature discharge of the second barrel, either through jarring off or by reason of a second involuntary pull on the trigger by the shooter on feeling the recoil ; this recommendation holds good

with heavy charges fired in the first barrel. In the result the one-triggered double hammerless gun, having automatic mechanism for the ejection of exploded shells, may be looked upon as the acme of perfection so far attained in the evolution of the shot-gun. The man who has but one trigger to pull is indisputably better placed than his neighbour with the double triggers in all situations where game comes thickly and flies fast. His grasp has not to be loosened, nor his right hand shifted, in pulling his one trigger; consequently, the gun is held with greater steadiness, and both a quicker and a surer aim can be secured.

I have several times had opportunities for giving various forms of single-triggered guns a thoroughly practical trial both at the shooting-range and in the field—in the latter case on driven partridges and other game. It is of course one thing to work, or to see worked, an innovation of the sort on a gun-maker's premises, and quite another matter to handle such weapon in the heat and stress of a partridge-drive. In the first-named situation the coolness and deliberation of the operator's movements are not so well calculated to bring out any inherent defects; but in the strong searchlight of actual practice—particularly amidst rain, wind and fog—a much better chance is presented for the discovery of any failings or peculiarities in the working of new guns.

I had the good fortune to be present at what I believe to have been the first successful public trial of a single-triggered double gun. Some eight years or more ago Messrs. Boss, St. James's St., W., invited me to witness the shooting of a gun made by them on this principle. The trial took place in the grounds of the London

Shooting School, and full facilities were given for making a thoroughly practical trial of this exceedingly ingenious device. After firing an extensive and extremely varied series of shots with light and heavy loads, I came away convinced that at length a thoroughly practical and workable method had been discovered for manipulating both locks of a double gun with one trigger.

I have since used in the field, with both comfort and success, a single-triggered double gun made by Mr. Charles Lancaster, 151 New Bond St., W. In this gun all risk of the simultaneous discharge, or premature firing of the second barrel, either by the jar or concussion of the first explosion, or by the sportsman's own involuntary clutch on the trigger, is entirely obviated by an ingenious and simple arrangement which Mr. Lancaster calls a "spring-detainer." This momentarily delays, in fact times, the movement of the switching trigger on the sear of the other lock until the shooter desires to pull off the second barrel. This plan lends itself to the application of the selective principle, by which means the barrels may be fired right-left or left-right as may be found expedient. This of course is a great advantage to those meeting with a variety of game, for they can thus use upon hare, pheasant, or wild-duck the No. 5 shot cartridge they may have in their left barrel, or upon snipe the No. 8 shot in their right barrel. Those, however, who shoot much at driven game, with barrels of identical boring, will find the selective principle less essential.

One morning in the autumn of 1897 there reached me a single-triggered double 12-bore from Messrs. Holland and Holland, 98 New Bond St., W., just as I was about

to join a party for some partridge-driving. Being keen to try the gun I decided to take it with me that day. This, all things considered, was scarcely fair to the gun, for in the absence of a little private rehearsal before essaying to shoot with a weapon entirely strange to me, it was well within the range of possibilities that some avoidable hitch might occur. At the outset I found that the trigger of this particular gun was designed with the forward slope or curve of the first trigger of a dual-triggered gun. Owing to this I at first experienced some little delay in getting off my second barrel, the forefinger, used to handling two triggers, instinctively dropping backward into the space left between this form of trigger and the trigger guard. Of course this personal error could in no way effect my opinion as to the working of the gun, which pleased me greatly, the mechanism answering each pull of the trigger with smoothness and certainty. The form of the trigger in these single-triggered guns is a matter of taste as well as of convenience, and Mr. Holland has informed me that either form of trigger seen on two-triggered guns can be applied to his single-triggered guns. I believe that the backward slope of an ordinary second trigger will be found to suit the average gunner best. I purposely fired a variety of cartridges out of this Holland single-trigger in order to make the test as thorough as possible, and to see if by any chance a breakdown might be effected. I found, however, that Eley's Pegamoid and ordinary paper cases, Joyce's paper cases, and Kynoch's paper and brass-covered paper shells with full charges of Schultze, Amberite, E. C., Cannonite-bulk and condensed, also Curtis and Harvey's No. 3 diamond grain black powder, were each and all fired and

ejected with utmost certainty and regularity when using this gun very rapidly.

This does not by any means exhaust the list of single-triggered guns now available. Messrs. Westley Richards, of London and Birmingham; Messrs. J. Lang, New Bond St., W.; Messrs. J. and W. Tolley, London and Birmingham; Mr. Blanch, Gracechurch St., E.C.; Messrs. F. T. Baker, Glasshouse St., W.; Mr. W. W. Greener, Birmingham; Messrs. Cogswell and Harrison, London, and several other notabilities in the gun-manufacturing world, each one has his particular form to offer the sportsman.

Many people confess to a liking for the well-tried damascus for gun-barrels, a metal composed of iron and steel mechanically intermixed and welded together. This is only for the reason that by the application of certain acids to the surface of this admixture of steel and iron, the process technically known as "browning," the general texture of the combination is discernible. To some extent, therefore, with barrels of this composite nature there is external evidence as to strength and reliability. With steel this is not the case, this metal presenting no appearance of figure or grain on its surface, so that in great measure its *bona fides* must be assumed. Experts in matters metallurgic tell us that properly-made barrels of a suitable form of steel are capable of withstanding greater strains and of long out-living the best and finest damascus barrels ever produced. Fortified by this assurance I have shot with several steel-barrelled guns by various makers, and, thus far, without hitch or drawback in their use. There are several forms of steel suitable for the manufacture of shot-gun barrels now on the market. The fluid—compressed steel emanating from the well-known

engineering firm of Sir Joseph Whitworth, as also the Siemens steel—I have used with much satisfaction on several occasions. Mr. W. W. Greener of Birmingham has a special form of steel which he makes use of for wild-fowl gun-barrels, and I have had pleasing results from certain of this maker's guns so fitted.

Krupps' "Spezial" steel was tried by the editor of *The Field* newspaper and found to be well-nigh indestructible. Still it strikes one that it is a pity if we should have to go abroad for more suitable steel for our gun-barrels. Surely steel possessed of properties equally as good as that made abroad can be produced in Britain. However patriotic and conservative of their country's best interests British sportsmen may be, it is but natural that they should follow the trend of every improvement in their accoutrement. Shooters now-a-days are more than ever particular to obtain that which best conduces to their comfort and success in sport; thus, if more reliable cartridge-cases or caps are to be obtained in America, France, or Belgium, or gun-barrels from Germany, they will be used in preference to articles that are less suitable, even should the latter be made in this country.

In the flint-lock period gun-barrels were much lengthier than now. Towards the close of that era we find guns used for game-shooting having barrels fully six inches longer than the general run of game guns of the present day. Colonel Hawker had a 14-bore with 30-inch barrels, or 44 times the diameter of the bore in length; but he preferred even longer barrels, three feet in length for choice. The quicker ignition and more rapid combustion of the powder brought about by the use of the percussion cap and closed breech gave rise to a shortening of the barrel, until in recent years 30 inches is

generally regarded as the regulation length of barrel for ordinary game guns. Reckoning on the diameter basis, the 12-bore having 30-inch barrels would be 41 diameters of bore in length of barrel. To be in the same proportion a 16-bore would only require 27 inches, a 20-bore 25 inches, and a 28-bore only 22 inches of barrel length.

A 12-bore of 7 lb. weight having 24-inch barrels will probably feel as light in hand and prove quite as manageable as a 30-inch 12-bore weighing but $6\frac{1}{4}$ lb. Naturally a gun with short barrels will feel stumpy to those unaccustomed to handle them; frequent use, however, soon causes this feeling to disappear. To my mind the great advantage to be derived from the use of short barrels is in the shooting of driven game. By their means the gunner may get on to his game more quickly, as in swinging his gun the muzzles of 26- or 28-inch barrels will have less travel than will those 30 inches in length. Those who have shot at fast oncoming and passing grouse or partridges, birds taken at close range or short angle, will be fully able to appreciate this advantage. Still, all considered this question of length of barrels is one best settled by individual taste or requirements. A slow shot may require a 30-inch barrel in order to feel fully assured that he is on his bird; on the other hand, the man of quick eye and ready hand may shoot with greatest success with barrels four or even six inches shorter, particularly in close driving work.

Probably nine-tenths of the guns used for game-shooting in this country are of 12-bore. Sportsmen, good and true, have often advocated the use of guns much smaller than the customary 12-bore for game-shooting. It is undeniable that some men have become exceedingly

skilful in the handling of 20-bores and even of 28-bores, and, having thus formed a high estimate of these small bores, have assumed that they must be equal in killing power to the 12-bore. This, however, is an exaggerated estimate, and the hypothesis will be completely upset by careful perusal of the reports of comparative target trials that have been published from time to time in the columns of *The Field*. I find that advocates of 20-bores frequently use one ounce of shot, but this is properly a 12-bore charge, and loads so heavy are not to be recommended in 20-bores, save in those of quite exceptional strength and weight. As a believer in the merits of the 12-bore for game-shooting, I do not wish to detract or in any way belittle the good properties of the smaller bores. That they possess certain advantages in the way of portability and general handiness over the 12-bores is undeniable, and of a truth those 20-bore men who can hold their own when shooting in company with 12-bores may well plume themselves upon their ability.

Whilst thoroughly convinced that, up to the present, there is nothing in the way of gun manufacture to at all compare with the best hand-made British gun, it would perhaps be scarcely fair to pass altogether in silence those who have devoted much earnest thought, time and money to the production of the shot-gun by machinery. Thus to cheapen the cost of production, whilst at the same time insuring the use of the best materials, is a measure that must interest the shooter of moderate means, or those anxious to secure a good sound article for the use of their gamekeepers. This endeavour is now in process in this country; it is a perfectly legitimate one, and it has at least the dis-

tinct advantage that thereby perfect interchangeability of parts may be secured. The breakage of some comparatively trivial part of his gun may mean total loss of sport, or a cessation of operations over a more or less extended period, especially to the man far apart from gunshops in the wilds of Scotland or Ireland, or abroad. With a machine-made gun the case would be different, for then, with duplicate parts in the gun-case, sport need suffer little interruption, whilst even in the worst event a wire to the maker would secure a new hammer, tumbler, striker-pin, fore-end bolt, or what not by next post. Mr. Edgar Harrison (Messrs. Cogswell and Harrison) has for some time given much attention to the manufacture of guns by machinery. Mr. Harrison some time ago informed me that he had thoroughly investigated the systems in practice on the continent of Europe and in the United States, and that his firm was expending very large sums of money in the purchase of machinery. Doubtless by this time, or very shortly, this firm will be in a position to supply guns of sound construction that will be interchangeable in every part.

To the shooter about to buy a gun I would say: Go to a gun-maker of experience, a man who has a reputation to make or to sustain, state precisely the kind of work for which the gun is wanted, and the price you are prepared to pay, and, nine times out of ten, you will not have cause to regret having taken such course. You will then at once get the article to suit your personal requirements. In the case of purchasing a second-hand gun the odds are reversed, as thus, probably, it is ten to one against finding the gun which exactly fits or shoots to your liking. Then, of course, alterations have to be effected and costs incurred, until in the end possibly as

much will have been expended upon it as would have purchased a new gun of the same quality.

Spurious guns, that is guns bearing forged or fictitious names, are far more common probably than many people may be aware of. Barefaced forgeries of the names of gun-makers of our day are not wanting, and it cannot be too widely known that guns are floating about the country bearing well-known names, or such close imitations of certain gun-makers' names as are well calculated to deceive. Some sportsmen who do not get sufficient shooting to warrant them going to a high price for a gun, prefer to buy a second-hand one of good quality by a maker of repute rather than purchase a brand-new one of inferior quality at the same price. The novice in these matters will do well, therefore, if, when purchasing a second-hand gun, he seeks the opinion of the maker, or, failing this, of some one properly qualified to offer an unbiassed opinion.



CHAPTER II

WILD-FOWL GUNS

VASTLY important improvements have been effected in this class of arm within the past twenty years or so. Still, looked at from the sportsman's standpoint, there yet remain directions in which improvement may be made in the generality of shoulder wild-fowl guns. Beginners should ever bear in mind one or two things when making choice of a gun for wild-fowl shooting. Avoid choosing unmanageable weapons through entertaining the idea that power is everything in a gun to be used for this sport. Certainly it is well to have a sufficiency of power for the work in hand ; and for daytime shooting, both ashore and afloat, where long shots are the order of the day, powerful guns must of necessity be carried. At the same time it is one thing to carry a thoroughly manageable weapon and quite another thing to out-gun oneself ; it is as well to recollect that to discharge even a ton of shot is of little use unless the gunner can direct its flight to just that spot where it will do most execution.

Many people are of the opinion that in wild-fowling only long shots are to be obtained, and that, as a consequence, only close-shooting guns are of value. This however is an impression that had better be dispelled. As remarked, this holds good to a certain extent when

shooting in daylight, more particularly on the sea and in nearly all open places. At flight-shooting, on the contrary, the shooting frequently takes place at ranges much closer than is the case in many phases of game-shooting. As when shooting rabbits in thick covert, or in partridge-driving, shots are occasionally taken at extremely short ranges; so, also, in the shooting of wild-ducks at evening or morning flight the birds come in very near at times. On these occasions the shooter is considerably handicapped whilst using a very close-shooting gun. Fifteen yards is quite a common distance at which to shoot at ducks at late evening or early morning flight, and if to bad light is added the extremely close and bullet-like pattern made by a fully-choked gun at that range it will be readily perceived that with such armament the chances of killing fast-flying fowl are not so very great on these occasions.

Unquestionably there is a tendency among wild-fowlers of the present day in the direction of choice of guns of less weight and, consequently, of smaller bore than were used by a bygone generation of shooters. The circumstances operating towards this change are clearly definable. Foremost may be mentioned the system of barrel-boring known as choking, that is a sharp constriction of the bore of the gun just within the muzzle, whereby a close delivery of the shot is effected. This newer method of barrel-boring wrought a wondrous change in the shooting of the shot-gun, so that powers never before attainable have been developed in marvellous degree. Thus it comes about that guns somewhat smaller in the bore are now used pretty extensively for the shooting of wild-fowl upon land. The shooting now obtainable from choked 12-bores was formerly procurable

only with guns some sizes larger in the bore, and, of course, with heavier charges ; even then, with extraneous aids in the form of wire-cartridge, or shot-concentrator, the shooting was not so regular nor so reliable as that now produced by choke-boring.

Another reason to which this change in the direction of smaller guns may be assigned is the use of longer paper cartridge-cases, and of thin metallic cases. These cases, both the long paper and the thin brass, naturally hold much larger charges than can be inclosed in cases of ordinary length and substance—the former by reason of increased length, and the brass cases because of their thinness, they being wider in the bore than paper cases of the same denomination. Thus it comes about that with a choked 12-bore gun of $7\frac{1}{2}$ lb. or 8 lb. weight we now get better shooting than could formerly be obtained with cylinder-bored 10-bores and guns of more imposing dimensions and weight. These causes are chiefly responsible for the change, which indeed is but natural evolution, in fact one further step forward towards that ideal gun which shall combine in itself the maximum of effectiveness with the minimum of weight.

Possibly one reason why wild-fowl guns of large calibre are unpopular in many quarters is that these guns, in many instances, do not receive the same amount of care and attention with regard to the form and symmetry of their stocks as is bestowed upon the 12-bores. Hitherto it would seem to have been an all too prevalent idea with gun-makers that so long as the shooting of the heavy shoulder-guns was assured, little else was required. As a matter of fact, however, the gunner who handles heavy 8- and 4-bore guns requires to be fitted with quite as much exactitude, care, and

skill as does the game shot with 12-bores. The heavy-weights are not raised so readily as are the lighter guns, and the shooter has not the same power to shift head or arm to accommodate himself to any defect in gun-fitting when holding out the former as he has with the latter. Stocks that are too thick in the grasp increase the difficulty of shooting tenfold; the slight increase in the weight of a gun caused by undue thickness of stock is not answerable for this so much as the fact that the gun thereby becomes unmanageable through the hands of the shooter being called upon to hold more than they can well grasp.

The sportsman accustomed to game guns possessing perfect symmetry of form and adaptability to his needs, with regard to the length, grasp, and shape of their stocks, takes very badly to the increased weight of 8-bores and 4-bores whenever these guns have ill-fitting and clumsy stocks. Usually, a considerable amount of practice is requisite in order to attain to the slightest degree of proficiency with badly-stocked wild-fowl guns. To the wild-fowler accustomed to use ill-fitting, awkward weapons, a really well-stocked duck-gun comes as a revelation. There is no gainsaying the fact that a properly designed 4-bore of 18 lb. weight is easier to manipulate than a badly-balanced and ill-fitting one of only 13 lb. or 14 lb. The one never appears to be its full weight, the other always feels like a log in the hand. Wild-fowlers themselves are too often to blame for certain of the evils I have mentioned; for how often do they submit to be measured and properly fitted for their duck-guns? For this reason, possibly, it is too often the case that duck-guns are built and stocked to one common standard, and thus so often prove totally un-

suitd to the build or requirements of the persons who may have to use them. If as much care were now to be given to the stocking and fitting of heavy wild-fowl guns as has been bestowed upon their shooting qualities, I venture to predict that this class would come to be used far more extensively than it is at present. I am aware that in order to avoid springing of the gun-stock, extra timber has to be used in the stocking of wild-fowl guns as compared with guns of smaller size; otherwise, 4-bores and 8-bores that were small in the grasp would on firing heavy charges be liable to have their muzzles depressed and so throw their shot low. If this difficulty could not be overcome by means of a carefully-devised form of metal strapping, I would suggest that the grasp or "hand" of the stock should be formed of some metal in order to secure sufficient rigidity, and the same time an entirely graspable and manageable gun-stock. If it could not well be arranged to have the "hand" of the stock formed of some material different to the butt, I would have the entire gun-stock made of aluminium or other metal which would lend itself to the formation of light and hollow gun-stocks. I feel assured there is a fortune before the gun-maker who will introduce a well-devised gun-stock of the kind I have indicated. With these stocks moulded to fit every length of arm and of neck, slope of shoulder and width of chest ordinarily met with upon sportsmen, and sized-up and numbered in much the same manner as are boot-lasts, the gun-maker having a supply of ready-made barrels and actions would be able to fit up a customer to a nicety, and at a moment's notice. Thereby also is presented a ready way out of the difficulty experienced in turning out the wooden stocks of guns and rifles by machinery. I would

further venture to remark, whilst on the subject, that if the War Office could have, say, half-a-dozen different forms and sizes of these metal stocks served out for the service rifle, far better shooting would result, particularly in the heat and stress of actual warfare.

Duck-guns may be sharply divided into two main classes—swivel-guns, and guns that are fired from the shoulder. The former are designed specially to be used from a yacht, launch, or other largish craft, or, more frequently still, from a single- or double-handed gunning-punt. Such guns range in size from the small swivel-gun of about 4-bore and from 25 lb. to 30 lb. weight, to the ponderous stanchion-gun carrying charges ranging from 18 dr. of powder and 6 oz of shot up to half-a-pound of powder and $2\frac{1}{2}$ lb. of lead.

The accompanying table of bores, weights, charges, and lengths may serve as a guide, although somewhat astonishing departures from these figures may be observed now and again:—

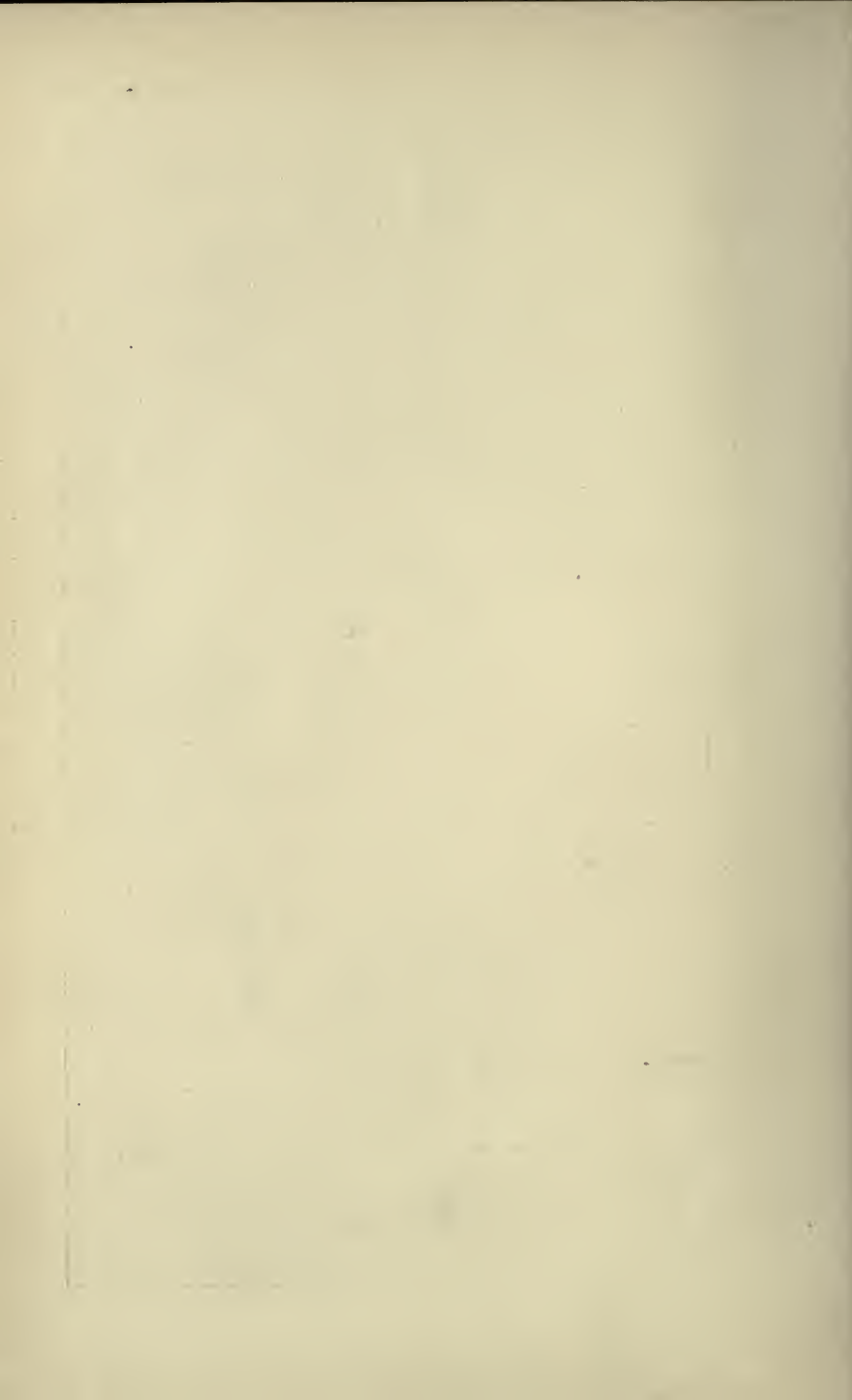
SWIVEL-GUNS.

Bore.	Weight.	Black Powder Charge.	Shot-load.	Length of Barrel.
4-bore (double)	27 lb. . . .	12 drs. . . .	4 to 6 oz. . .	40 inch.
$1\frac{1}{8}$ in. (single).	30 lb. . . .	18 to 21 drs. .	6 to 7 oz. . .	60 „
„ „ .	60 to 80 lb. .	2 oz. to $2\frac{1}{2}$ oz.	10 to 12 oz. .	80 „
$1\frac{1}{4}$ in. „ .	90 to 100 lb. .	3 oz.	16 oz. . . .	90 „
$1\frac{3}{8}$ in. „ .	120 lb. . . .	4 oz.	20 oz. . . .	96 „
$1\frac{1}{2}$ in. „ .	140 to 150 lb. .	5 oz.	25 oz. . . .	100 „
$1\frac{3}{4}$ in. „ .	160 to 170 lb. .	$5\frac{1}{2}$ oz.	28 oz. . . .	102 „
2 in. „ .	190 to 200 lb. .	6 oz. to 7 oz. .	32 to 40 oz. .	112 „

It will be a tolerably safe guide for the users of these guns to remember that the proportion of powder to shot may generally be fixed in the ratio of 1 to 5; to this



• A RIGHT AND LEFT AT MALLARD.



rule there are, of course, exceptions, as there are to almost everything connected with guns and gunnery. Certain guns and methods of loading will consume a greater proportion of powder to shot than will other guns of the same bore; this with increased efficiency, and perhaps also without an appreciable augmentation of recoil. It must, however, be distinctly understood that the above-mentioned powder charges are for good black powder only. The gunner must also be careful to select powder of a grain sufficiently large for these large bores, for if too small in the grain, the explosion will be unnecessarily severe, perhaps even dangerously so. I have used the adjective "good" advisedly, for I have known several professional punt-gunners habitually fire common blasting-powder out of their big guns, the cost of this explosive being something like 10*d.* per pound. The use of inferior powder has nothing to commend it to the notice of the amateur, either in this or any other branch of shooting. If used in a punt-gun increased charges will have to be fired to make the gun shoot up to its proper form, and this naturally results in an increase of noise, smoke and fouling, three nuisances that can well be dispensed with as much as possible in punt-gunning.

I recollect some few years ago giving a tin of Curtis and Harvey's punt-gun powder to an old gunner of my acquaintance. Previously he had used nothing but common blasting-powder, and was so impressed both by the readiness of ignition and the driving power of this powder, which added considerably to the killing range of his gun, that he decided to use powder of better quality in the future. I shall never forget his look of blank amazement when he came to mop out his big gun

after the first shot with what was to him an entirely new powder, for instead of finding, as usual, a thick coating of slimy, greasy fouling on the tow of the cleaning-rod, there appeared but a slight discoloration and very little dirt.

In recent years sportsmen have evinced a marked desire to obtain swivel-guns that would combine, to the greatest possible extent, the maximum of power with the minimum of weight and cumbrousness. This desire has been well met in many instances to my own knowledge. As an example, I may perhaps mention that some few winters ago I shot with a remarkably handy double 4-bore of some 27 lb. weight, made by Messrs. Jas. Lang and Sons. This gun is fired with a rope attachment for taking up the recoil, and, thus fixed, 4 oz. or more of shot may be fired from each barrel with absolute comfort. It is an excellent type of light gun for boat work in many situations; and in mild weather, when birds do not congregate very thickly, the $\frac{1}{2}$ lb. or 10 oz. of shot, thus divided, may be used to greater advantage than it would be as a single charge. Moreover, as boats usually show more or less movement on the water, an opportunity may often occur for amending any faulty aim in delivering the first half of the charge. Another remarkably handy punt-gun of small size that very much took my fancy a while ago was one made by Mr. F. T. Baker of Glasshouse St., Regent St., W., from designs drawn up by a West-End physician who is especially fond of wild-fowl shooting. This is a small single-barrelled swivel-gun of under 30 lb. weight, and possibly of greater range than the double gun just mentioned, but which, however, does not carry quite so heavy a charge as the combined loads of the latter;

the ordinary charge for the single gun being, if my memory serves me, something like 7 oz. Between swivel-guns such as these and the heavy artillery last named in the foregoing list, there is of course a very wide difference. Messrs. Holland and Holland, 98 New Bond St., London, have long been justly famed for the excellence of their punt-guns, which combine in very high degree those properties most to be desired in guns of this calibre. For safety, compactness, ease of manipulation, beauty of design, and shooting power, the "London" punt-gun of Messrs. Holland probably cannot be excelled. Messrs. J. and W. Tolley, 59 New Bond St., W., have also long been in the fore-front as makers of punt-guns, and, indeed, of every other class of wild-fowl gun. Messrs. Thos. Bland, West Strand, London, as also Messrs. Moore and Grey, Piccadilly, W., are other makers who turn out heavy wild-fowl guns with mathematical exactitude and of undoubted reliability.

Next, as to guns of the second division :—

SHOULDER DUCK-GUNS.

PAPER-CASE GUNS.

Bore.	Weight.	Black Powder Charge.	Shot-load.	Length of Barrel.
2	18 to 22 lb.	13½ to 15 drs.	4½ to 5 oz.	42 inch.
4	13 to 16 „	9 to 10½ „	3 to 3½ „	40 „
8	11 to 15 „	6 to 7½ „	2 to 2½ „	32 to 38 in.
10	9 to 10½ „	4½ to 5½ „	1½ to 1¾ „	32 to 36 „
12 (3-inch case)	8 to 9¼ „	3½ to 4¾ „	1¼ to 1⅝ „	32 inch.
12 (2¾-inch case)	7¼ to 8 „	3¼ to 3¾ „	1¼ to 1½ „	30 „

BRASS-CASE GUNS.

4	14 to 20 lb.	10½ to 12 drs.	3½ to 4 oz.	40 inch.
8	11 to 16 „	6½ to 9 „	2¼ to 3 „	32 to 38 in.
10	9¼ to 11 „	5 to 6 „	1¾ to 2 „	32 to 36 „
12 (long case)	8½ to 9½ „	4¾ to 5 „	1½ to 1¾ „	32 inch.
12 (short „)	7½ to 8 „	4 to 4½ „	1¼ to 1½ „	30 „

Here again, as the powder charges are expressed in drachms, it will be understood that black powder is referred to. As some wild-fowlers will, doubtless, prefer to use a nitro-compound in their shoulder-gun, it may be remarked that proportionate charges of the bulk powders, Schultze, E.C., S.S., or Amberite, may be used in these guns instead of black powder.

The term brass-case gun is applied to those shot-guns bored more especially for use with brass cartridge-cases. The brass case most frequently used in this country is that known as the "Perfect," and which is made by Messrs. Kynoch Ltd., Birmingham. Messrs. Eley Bros., London, formerly made a solid-drawn brass case, and, I believe, still continue to do so, but these, probably owing to the cost of production being high, and necessarily higher price, have not been so generally adopted. The cost of the "Perfect" metallic case is much the same as that of the better paper cases. The tube of this case is formed of brass considerably thinner than the paper of ordinary cases; consequently, as the external diameter of a case of thin brass is the same as that of a paper case of the same denomination, it will be perceived that the internal diameter of its tube, *i. e.* the bore, is larger than that of the paper case. Thus larger wads are required for the thin brass cases than for paper cases bearing the same number. For this reason, in guns bored especially for brass cases, the bore of the barrel at the widest part will gauge, approximately, two sizes larger; that is to say, a No. 12 brass-case gun is practically a 10-gauge, a No. 10 may be virtually an 8-bore, and so on. Thus owing to their greater capacity we see heavier loads in the thin brass cases generally than in the paper cases of the same length. In this connection

it is as well to remark that the employment of brass cases with their full loads in paper-case guns is not always advisable ; as, of course, common-sense tells us, to fire 10-bore charges and wadding out of a 12-bore gun does but invite unpleasant consequences in the way of excessive recoil, or even of danger in the case of inferior, ill-constructed guns. Whilst on the subject of risks, it will be as well also to say that the firing of $2\frac{3}{4}$ -inch cases in a paper-case gun chambered for $2\frac{1}{2}$ -inch cases is to be strongly deprecated. It may, in the worst event, cause accident, and in any case, by retarding the movement of the shot, it gives the powder more time to develop its latent energy, and so, by increasing the pressure in the cartridge-chamber, must strain and tend to loosen the action of the gun.

Ordinary 12-bores, that is guns used for game-shooting, are not sufficiently powerful for the killing of hardy wild-fowl, for in addition to the general toughness of such quarry, there is the consideration that wild-ducks, geese, and the like are frequently killed at longish ranges. For this reason several gun-makers have given attention to the production of long-chambered 12-bores for shooting wild-game and wild-fowl. Certain of these I have put to a practical test on many occasions, therefore, basing my remarks on a thorough acquaintance with their shooting properties, I will take three different types of gun to illustrate these remarks. These are as follow :—

(1) A gun for long paper cases.

(2) A gun for thin brass cases.

(3) A gun to take long or short, paper or brass cases.

Number 1 on this list was made by Mr. Charles Lancaster, 151 New Bond St., London, W. There was

nothing extraordinary about the appearance of this gun, which weighed under $7\frac{1}{4}$ lb. and was chambered to take $2\frac{3}{4}$ -inch paper cases. With $1\frac{1}{4}$ oz. of No. 5 or of No. 3 shot, driven along by a good charge of powder, this gun proved most deadly, in fact an ideal gun for an occasional shot at wild-fowl, or for the killing of hares and of all wild winged game late in the season. This 12-bore was fully choked, and on trial at the target I found it threw a full ounce of shot within the 30-inch circle at the 40 yards range, and with a remarkably even distribution of the pellets. This Lancaster 12-bore shot BB. just as well as the smaller sizes, and this proved most fortunate some few years ago when I was shooting in a district much frequented by wild-geese. Then a goose-drive was an occasional feature of a day's partridge-shooting, and with two or three large-shot cartridges tucked away in my waistcoat-pocket I was able now and again to score decisively against these big wide-awake fowl.

Gun No. 2 is a slightly heavier gun by Mr. W. W. Greener of Birmingham. It is bored especially for the thin brass cases known as "Perfect," and with a full charge of No. 4 shot has proved itself most effective upon wild-fowl. Having the hammerless action, this gun is in high favour for boat-work and for shore-shooting. With $1\frac{1}{2}$ oz. of No. 4 shot the gun throws excellent patterns of about 200 pellets on the 30-inch circle. I am certain that I have killed ducks and shore-birds at distances exceeding 60 yards, on several occasions, with this gun. Close patterns such as these are, of course, best adapted for wild-fowl shooting in the daytime; with them the wild-fowler will be placed at a disadvantage when flight-shooting, as then ducks are

frequently no more than 15 yards away. But this is a matter of detail, and the remedy is in one's own hands, for no doubt the maker of the gun would guarantee to affix an extra pair of barrels to throw any desirable patterns for flight-shooting purposes.

Gun No. 3 on the foregoing list was one to which the title "Altro" has been applied by the makers, Messrs. J. and W. Tolley. This gun, from its capacity for firing either ordinary-length cartridges or cartridges of extra length, paper or brass, could be used with light or heavy loads, and thus was found to be an extremely useful weapon in a variety of situations.

In bygone days, when black powder alone was used, the barrels of duck-guns were invariably made of considerable length. Now and again single-barrelled wild-fowl guns having barrels of 4 feet or of even greater length were observable. The main object in making barrels of this length was to insure the combustion of the powder by the time the shot reached the muzzle of the piece. Still with all that length of tube this object was not always usefully accomplished, for the defective or insufficient wadding then in use frequently failed in duly confining the powder-gases, so that a considerable quantity of powder was thrown out unconsumed or uselessly ignited by the flash at the muzzle. A noteworthy improvement has been effected in modern times in the direction of shortening the barrels of heavy shoulder-guns. Gun-makers have been able to accomplish a good deal in this way in recent years by reason of the great change brought about in the manner of barrel-boring, and by means of the help rendered them in the way of improvements in the manufacture of powder, wadding, and of ammunition generally.

Owing to the attention lately given to explosives and the scientific exactitude brought to bear on their manufacture, sportsmen and gun-makers are now put in possession of powders which will serve their purpose far better in many ways than did the black powder of by-gone days. The ignition and combustion of these modern productions can be regulated to a nicety, and as the later tendency would seem to be in the direction of letting the powder do much of its work near the breech of the gun, it has been found that some few inches of the muzzle-end of the barrel may be dispensed with.

A reduction of 6, 8, or 10 inches in the length of barrel of heavy shoulder-guns would prove a great gain, and one that would be immensely appreciated by wild-fowlers, provided, of course, that the power and efficiency of the arm was not impaired thereby. Some few years ago, whilst carrying out some experiments with nitro-powders in wild-fowl guns for *The Field* newspaper, I remarked upon the advantages that would accrue from a shortening of the barrels of those duck-guns especially designed for use with the newer form of explosives. Thereupon Messrs. Westley Richards wrote, asking me if I would draw up for their guidance specifications embodying my ideas as to what might be effected in this direction. I went carefully into the matter and recommended the following:—

DUCK-GUNS FOR SMOKELESS POWDER.

LIGHT DOUBLE 8-BORE FOR DAY SHOOTING.

Weight . . .	10 lb.
Barrels . . .	30 inches.
Case . . .	“ Perfect ” for bulk powders ; for condensed nitro coned-base paper

- Charge : powder . 76 to 80 grains Schultze, S.S., or Amberite,
or the proper equivalent in condensed
powders.
- „ shot . 2 oz. Nos. 4 or 3, $2\frac{1}{4}$ oz. BB.
- Boring . Full choke, both barrels to throw nice even
patterns at 50 and 60 yards.

LIGHT 8-BORE FOR FLIGHT-SHOOTING AND GENERAL NIGHT-
WORK.

- Weight . $9\frac{1}{4}$ lb.
- Barrels . 26 to 28 inches.
- Case .
- Powder . } as before.
- Shot . }
- Boring . Cylinder, or very slight choke, to give a killing circle
as wide as possible at 30 yards.

Two pairs of barrels fitted on to one stock and bored on these lines would form an extremely light and efficient ducking battery for use by day and night. In this case however I should recommend a length of 28 inches for both pairs of barrels, otherwise with barrels of different length the balance of the gun would be destroyed.

MEDIUM-WEIGHT DOUBLE 8-BORE.

- Weight . $11\frac{1}{2}$ lb.
- Barrels . 32 inches.
- Case . Thin brass or paper.
- Powder . 95 grains bulk nitro, or due equivalent of a condensed powder.
- Shot . $2\frac{1}{2}$ oz.
- Boring . Right barrel medium ; left barrel full choke.

HEAVY-WEIGHT DOUBLE 8-BORE.

- Weight . 13 lb.
- Barrels . 34 inches.
- Case . Brass or paper.
- Powder . 104 grains bulk smokeless, or equivalent charge of condensed.
- Shot . $2\frac{3}{4}$ oz.

An extremely powerful gun, and, if fully choked, especially suitable for wild-geese and the larger fowl.

LIGHT SINGLE 4-BORE FOR SMOKELESS POWDER.

Weight	. 11 to 12 lb.
Barrel	. 34 inches.
Case	. Brass or paper.
Powder	. 115 grains bulk, or the equivalent in a condensed powder.
Shot	. 3 oz.
Boring	. Full choke.

An exceptionally handy gun for use where much walking has to be done or bad ground to be traversed, as in following the larger flights of fowl along shore. With 3 oz. of No. 2 or No. 1 shot this gun should do good execution at 70 to 80 yards among wild-duck and wigeon—distances at which the most powerful 12-bore could only account for a bird now and again.

HEAVY SINGLE 4-BORE FOR SMOKELESS POWDER.

Weight	. 16 to 18 lb.
Barrel	. 35 inches.
Case	. Brass or coned-base paper.
Powder	. 130 to 150 grains bulk, or the equivalent in condensed nitro powder.
Shot	. $3\frac{1}{2}$ to 4 oz.
Boring	. Full choke, to give even patterns at 60, 80, and 100 yards with No. 1 and larger sizes of shot.

A highly useful gun for boat-work or for stalking big gaggles of grey-geese feeding inland.

HANDY DOUBLE 4-BORE FOR SMOKELESS POWDER.

Weight	. 14 lb.
Barrels	. 34 inches.
Case	. Brass or paper.
Powder	. 115 to 125 grains bulk nitro, equal in condensed nitro.
Shot	. 3 oz. No. 1 shot, $3\frac{1}{2}$ oz. BB, and the larger sizes of shot.
Boring	. Medium and full choke in right and left barrels respectively.

One of the most powerful shoulder-guns possible, enabling the wild-fowler to fire 6 oz. to 7 oz. into the smaller gatherings of geese and duck, and so dispense with the use of the punt-gun on occasion.

All these guns to be made on the Anson and Deeley hammerless principle, with top lever snap-action, and cartridge-ejecting mechanism. Messrs. Westley Richards built a series of these guns, and early in 1900 I received one for trial, and some particulars of its performances at the target are given in the next ensuing chapter.

It will not be out of place, however, here to refer to the system of hand-detachable locks on the hammerless principle, which I found had been applied to this particular gun. This exceedingly simple and ingenious arrangement permits of the instant removal of lock-cover and locks by means of thumb and forefinger alone. This should certainly prove of value to wild-fowlers, of all sportsmen, for in the by no means rare event of having the gun thoroughly soured with sea- or fresh-water, the locks can be taken out for inspection and cleaning anywhere and at any time. In a gun so easily taken apart, the deleterious action of the sea-air upon the bright interior of the gun-locks can be most effectually checked and counteracted. Another advantage possessed by this principle of hand-detachable locks is the power it places in the hands of the owner to prevent injury to his gun from the snapping off of the locks by meddling fingers. In some instances it has occurred that guns have been taken out and used in the absence of the owner. With locks altogether removed, the owner of the gun need have no fear of injury to his property from either cause.

Some time ago I was having a chat with Mr. Edgar

Harrison, of the well-known firm of Messrs. Cogswell and Harrison, and on my suggesting to him that wild-fowlers were not so well served in the matter of cheaper forms of hammerless and ejector-gun as their more fortunate brethren the game-shooters, he decided to produce a plain strong gun in which should be embodied the more recent improvements. One of the earliest examples of guns of this pattern I have shot with somewhat extensively ; it may be briefly described as follows:—A plain, strongly-built gun, having extra stout barrels of steel, 30 inches long, chambered for 3-inch cases, and both full choke ; top-lever action, with cross-bolt ; hammerless locks, cartridge-ejecting mechanism, and snap fore-end. The price of this hammerless ejector is £16, but I find that this firm produces a similar gun without ejector for £12.



CHAPTER III

GUN-TESTING. TARGET RESULTS. SHOT-GUN PATTERNS

BY common consent, the 40 yards range, the 30-inch circle, and the charge of 3 dr. powder to $1\frac{1}{8}$ oz. No. 6 shot, have come to be regarded as standards for the target trial of 12-bore game guns. This distance may be looked upon as the effective killing range of such guns, and, as evidencing in a practical way their full capabilities and powers, this method of trial may be looked upon as a reliable gun-maker's test. At the same time, for sportsmen to do the whole of their gun-testing at this range is bad in principle, if we consider that the greater percentage of game killed in this country is shot at about half that distance.

Gun-makers can now give the sportsman practically any pattern he may desire at 40 yards; should he therefore decide to have the barrels of his game gun bored to throw a very open pattern, a display of 100 pellet-marks within the 30-inch circle at 40 yards, or a decidedly close pattern, say, 210 pellets with the $1\frac{1}{8}$ oz. No. 6 shot at the same distance, his taste can be suited to a nicety. The choice of pattern should be determined by the sportsman's skill as a shot, and also by the work to be done. For use in an open country, and particularly

for shooting wild-game late in the season, or where hares abound, a fully-choked gun throwing patterns of about 200 pellets in the 30-inch circle at 40 yards, with $1\frac{1}{8}$ oz. No. 6 shot of 270 pellets per ounce; of 185 to 190 with "medium game," or $5\frac{1}{2}$ shot of 240 to the ounce; or of 160 to 170 with No. 5 shot of 218 pellets, will be found an excellent type of weapon to use. On the other hand, for all ordinary work, in covert-shooting, grouse- and partridge-driving, rabbit-shooting, and the like, a pattern of about 140 will be found the best for gunners of average ability. Of course, in covert-shooting we now and again come across remarkably tall pheasants in some situations where perhaps a full-choke and large shot would prove of great assistance; but these are isolated instances that may in a measure be met by some modification of charge. A change to $1\frac{3}{16}$ oz. No. 3 shot for these extreme cases will generally be found, I think, to give useful results. Here again, however, target trial, at 40 or 45 yards range, will best determine the proper value of such emergency loads.

Sportsmen incline overmuch to assume that certain loads will answer their purpose, without first making practical target test of the same. The fact should not be ignored that barrels vary considerably in the manner of their boring and in the amount of choke given to them, so that, as a consequence, a load or form of wadding admirably suitable for one gun may prove anything but a success in another gun of the same denomination. For this reason it is scarcely practicable to lay down any hard-and-fast set of tables with respect to the loads best suited to any given bore of shot-gun beyond those for which it may have been regulated by the gun-maker.

On being required to build a gun, the gun-maker will frequently be asked to regulate the boring to produce a certain pattern with some particular size of shot and kind of powder. Having carried out his instructions he will have done all that has been required of him on this head. Thereafter, on changing this load, some variation in size of shot or make of powder being effected, the gunner, often as not, is in complete ignorance as to the performance of his gun under the altered conditions. Naturally, in such case, trial at the target is at once the readiest means for settling all doubts as to the suitability of specific loads for each and every gun.

Sportsmen living at a distance from their gun-maker, and who thus cannot conveniently have access to a shooting-range, will do well to fix up a target of their own. This need not be either an elaborate or a costly affair. Two 4-feet squares of stout sheet-iron fixed up against a wall or fence, some 3 or 4 yards apart, and with their lower edges about 3 feet from the ground, will prove generally sufficient as targets for the sportsman's purpose. The range should be accurately measured by a surveyor's tape or chain, and firing-points staked off at intervals of 5 yards, starting from 15 or 20 yards and up to, say, 60 yards. The last-named distance is as far as one need go in conducting any practical trials of game guns. A pot of whitewash with brush, and a scribe to mark off 30-inch circles on the whitewashed plates, render the equipment complete so far as pattern-testing is concerned. The reason I recommend two targets, placed side by side, is, of course, to lessen both the time consumed and amount of walking to be done; for with targets so arranged the experimenter may fire both barrels of his double gun

before walking up to count the patterns. Another gain resulting from the use of two targets so placed is the facility thus accorded for making comparison of the shooting of each barrel of a double gun, or of different loads from one barrel. In the trial of shot-guns at the target it is well to bear in mind that a steady rifle-like aim must be taken if strict justice is to be done to the gun. The result of defective aiming will be most felt in shooting at a fixed circle, that is to say, a circle marked on the whitewashed plate prior to shooting, for in this case a steady reliable shot will place on an average 20 or 30 more pellets within that circle than will the indifferent or careless shot.

It must be remembered, too, that the firing at a target in cold blood and the shooting at game in all the heat and stress of sport are totally different matters; a gun-recoil that would not be noticed in the latter may appear to be a painfully prominent feature in the former class of entertainment. Some men therefore become what may be termed recoil-conscious when firing at a target; that is to say, they are so keenly alive to, and dread so much, the coming recoil that they acquire the fatal habit of flinching on pulling the trigger. As a corrective to unreliable marksmanship of this sort, a gun-rest may well be recommended. In a general way I find it best to take aim at a small mark placed in the centre of the target—a dab from the paper end of an exploded shell will make this—and afterwards describe the 30-inch circle so that it covers the best of the pattern; then carefully note each time how far the centre of this selected circle is from the spot aimed at—the “bull’s-eye,” in fact. If throughout a course of a dozen rounds the centre of the selected pattern per-

sistently remains a few inches to right or left, or high or low, of the "bull," such persistence clearly points to the fact that the gun is not shooting true. At the same time it must be borne in mind that on unsheltered ranges a strong cross wind will deflect the shot to a considerable extent.

Sportsmen who are aware of the time and labour involved in the conduct of any extensive series of target experiments, with the wearisome walking backward and forward between the targets and the firing-point, and the constant counting up of the pellet-marks, will assuredly feel grateful for anything which tends to lessen the irksomeness and monotony of such occupation. The task of many shooters who essay to test their own guns may frequently be enormously lightened by consultation of back numbers of *The Field* newspaper. For more than a quarter of a century successive editors of that journal have periodically carried out voluminous and costly experiments with the shot-gun, with a view to solve many vexed problems of the gunner or the gun-maker. A reference to these reports will frequently disperse a sportsman's doubts and answer several of his queries as they arise. It is, however, a tedious business wading through portly volumes of so bulky a paper as *The Field*, and some six or seven years ago I suggested to the then editor, the late Mr. Frederick Toms, the expediency of republishing in book form those reports likely to be of greatest and most permanent usefulness to the shooting world at large. This suggestion was acted upon, and thereafter appeared in two parts, "Sporting Guns and Gunpowders," comprising a selection from reports of experiments and other articles published in *The Field* relative to fire-arms and explosives. The

sportsman anxious to be informed and posted up in many matters connected with the science of shot-gunnery will here find an astonishing variety of subjects treated in thoroughly practical fashion, in a manner necessarily technical, yet not too severely so ; and what is much to the point, studied with a view to extract from them all that may forward or conserve his interests.

Another technical and highly instructive publication that may prove greatly helpful to those who may wish to save themselves much labour in solving many of the problems and puzzles that beset the path of the novice in the art of gun-testing at the target is an instructive pamphlet by Mr. R. W. S. Griffith—the reproduction of a lecture delivered by him on April 26, 1897, before the Gun-makers' Association in the Hall of the Royal United Service Institution, Whitehall, S.W., at which lecture, by the way, I had the good fortune to be present. Mr. Griffith, as some of my readers, doubtless, are aware, is superintendent of the Schultze Gunpowder Company's manufactory in the New Forest, and by virtue of his numberless target experiments with the shot-gun, his statements relative to the shooting powers of that particular class of arm must be looked upon as exceptionally valuable. By following the expert evidence adduced by the editors of *The Field* and by Mr. Griffith, the shooting tyro will be enabled to avoid many pitfalls and lessen his labours in gun-testing enormously by discarding all thought of many unprofitable experiments whose results are already a foregone conclusion.

To many ardent gunners there is a certain fascination in determining as to the behaviour of a charge of small shot on its flight, as evidenced by the disposition of the

pellets upon a whitewashed target at various ranges. Moreover, in these days of new powders, new cartridges, new caps, new everything in fact, it becomes more than ever necessary to success in the shooting-field that due regard should be paid, amongst other essentials, to the patterns displayed by the shot. Pattern, it must be remembered, is of primary importance, for it matters not how great the velocity imparted to the shot-pellets, nor how skilful the aim of the shooter, without pattern all is lost. A sufficiently thick and even distribution of the pellets in the form of pattern is indispensably requisite for the killing of game handsomely, and in consistently good form. Therefore, let me reiterate, occasional target experiments may save endless heart-burnings in the field. They guide the gunner in the selection of suitably loaded cartridges, so that he may do himself justice by shooting well up to and not below his proper form, and thereby make steady, even if not brilliant, practice.

I have spoken little of penetration whilst mentioning much about pattern. As a matter of fact, with the sportsman of these times, penetration is a somewhat minor consideration compared with pattern. In a general way we must look to the barrel-borer to give us penetration, for with powerful modern powders and precise methods of loading, it is not so much the starting of the shot that we sportsmen need concern ourselves about, it is its due control after starting, the manner of its delivery from the gun-barrel, that will largely determine the question of sufficiency of penetration on arrival at its destination. Skilful barrel-borers of to-day can insure obtaining the best work from the shot under prevailing conditions, therefore the gunner need think

less about penetration than about pattern, for, ninety-nine times out of one hundred, provided full powder charges are used and the pattern is fairly distributed over the circle at 40 yards, the penetration will suffice for all practical purposes of game or wild-fowl shooting.

For sportsmen desirous of testing the penetration of their guns, the card-rack is, I think, the readiest and most simple test extant. There are, I am aware, objections to be urged against the card-rack; still, I think it cannot be denied that at present it is the most reliable instrument that we have for testing the penetration of shot at the end of its journey. The card-rack is simple to work, the results it gives are clearly to be seen, and, provided due care is exercised in procuring straw-board sheets of uniform weight, texture, and dryness, the records obtained are sufficiently reliable for all practical purposes as a comparative test for sportsmen. Delicate instruments like the chronograph soon get out of order, and are totally unsuited for the everyday use of sportsmen. Moreover one great drawback with the chronograph is, that the pellet velocities registered by it are taken at the commencement of the flight of the shot-charge. Under present circumstances we cannot very well dispense with records so taken, but to be thoroughly serviceable the speed of the pellets should also be recorded at the usual distances at which game and wild-fowl are killed. If means could be devised for accurately determining the speed of flight of the shot pellets at various distances from 30 to 100 yards, much more valuable data could be acquired with respect to the driving power of a powder and the flight and relative value of the different sizes of shot at the full distance at which they are required to be used in game

and wild-fowl guns. Final velocities more nearly concern the sportsman than do initial velocities; and these, as remarked, are in great measure controlled or determined by the manner of flight of the shot-charge. Naturally, if the pellets move as a compact mass the air resistance will be better overcome and the diminution of velocity will be more gradual. A shot-charge that scatters at the muzzle quickly loses velocity, the reduction in speed being more rapid in the case of pellets thus acting individually. This accounts for the superiority in the matter of killing power at lengthier ranges of the choked over the cylinder-bored gun.

The following remarkable series of patterns proves conclusively that it is possible so to bore a gun that it will shoot really well with various cartridges shorter than the length of its chamber. The gun used for the purpose of these trials was a double hammerless ejector, of 12-bore, built for me by Messrs. Cogswell and Harrison, London, especially as a handy gun for shooting wild-game or wild-fowl. It weighs $7\frac{1}{2}$ lb., has steel barrels, chambers 3 inches in length, and carries a charge of $1\frac{1}{2}$ oz. of the larger sizes of shot quite comfortably. All the shots were fired at the 40 yards range, and the patterns counted within a circle 30 inches in diameter.

(1) 3-INCH BRASS CASES, NO. 6 SHOT.

Kynoch thin brass "Perfect" case, $52\frac{1}{2}$ grs. Kynoch smokeless powder, and $1\frac{3}{8}$ oz. chilled No. 6 shot, 270 pellets to the ounce; wadding: one *Field* wad, one $\frac{1}{2}$ inch soft felt, and one card on the powder, with one card over the shot, all 10-gauge.

Left barrel. 247, 219, 214, 268, 251, 230, average = 238.

Right barrel. 246, 244, 252, 240, 238, 244, do. = 244.

The distribution of the pellets on the target ranged from fair to very good.

(2) 3-INCH BRASS CASES, NO. 4 SHOT.

Same case and wadding as in the foregoing trial, 56 grs. Kynoch smokeless powder and $1\frac{1}{2}$ oz. chilled No. 4 shot, 170 pellets per ounce.

Left barrel. 149, 165, 169, 140, 151, 160, average = 155.

Right barrel. 153, 152, 149, 167, 168, 149, do. = 156.

No fault could be found with regard to the distribution of the pellets on the whitewashed plate.

Curiosity next prompted me to make trial of ordinary game cartridges in this gun ; this resulted as follows :—

(3) $2\frac{1}{2}$ -INCH PAPER CASES, NO. 5 SHOT.

Kynoch "perfectly gas-tight" paper case, 42 grs. Kynoch smokeless powder, and $1\frac{1}{8}$ No. 5 shot, 220 pellets per ounce ; wadding : card, thick felt, and card on powder, and card over shot, all 12-gauge.

Left barrel. 180, 180, 184, 181, 194, 182, average = 183.

Right barrel. 176, 170, 199, 170, 174, 171, do. = 176.

A truly remarkable series, both as regards regularity of count and distribution within the circle.

In view of the fact that so many sportsmen speak in high terms of praise respecting their experience with 2-inch cartridges on game, it is interesting to note the performance of these short cartridges in this particular gun, which, be it remembered, has 3-inch chambers. The following is the record as to pattern of a dozen shots, fired with two totally different types of short cartridge.

(4) $2\frac{1}{4}$ -INCH PAPER CASES, NO. $5\frac{1}{2}$ SHOT.

F. Joyce and Co. paper case, 30 grs. Walsrode smokeless powder, 1 oz., full, No. $5\frac{1}{2}$ shot, 245 pellets per ounce ; wadding : thin card, $\frac{3}{8}$ inch felt, $\frac{3}{8}$ inch black and pink cloth wad on powder, and stout card over shot. These are Chas. Lancaster's "Pygmy" cartridges, the length of loaded cartridge, with good turnover, being just over 2 inches.

Left barrel. 147, 165, 180, average = 164.

Right barrel. 176, 154, 178, do. = 169.

In three or four of the shots the distribution of the pellets was admirable, and in the remainder it was fairly good ; there certainly was no trace of balling.

(5) 2-INCH PAPER CASE, NO. 6 SHOT.

Eley Bros. 2-inch paper case, with cone-shaped powder-chamber for concentrated powder ; $25\frac{1}{2}$ grs. Ballistite sporting powder, $1\frac{1}{8}$ oz. No. 6 shot ; wadding : thin card, $\frac{5}{16}$ inch very soft greasy felt, and two thin cards on the powder ; one card over the shot. This is Nobel's "Parvo" cartridge, and it is well named, for its total length is but $1\frac{3}{8}\frac{1}{2}$ inches.

Left barrel. 198, 215, 203, average = 205.

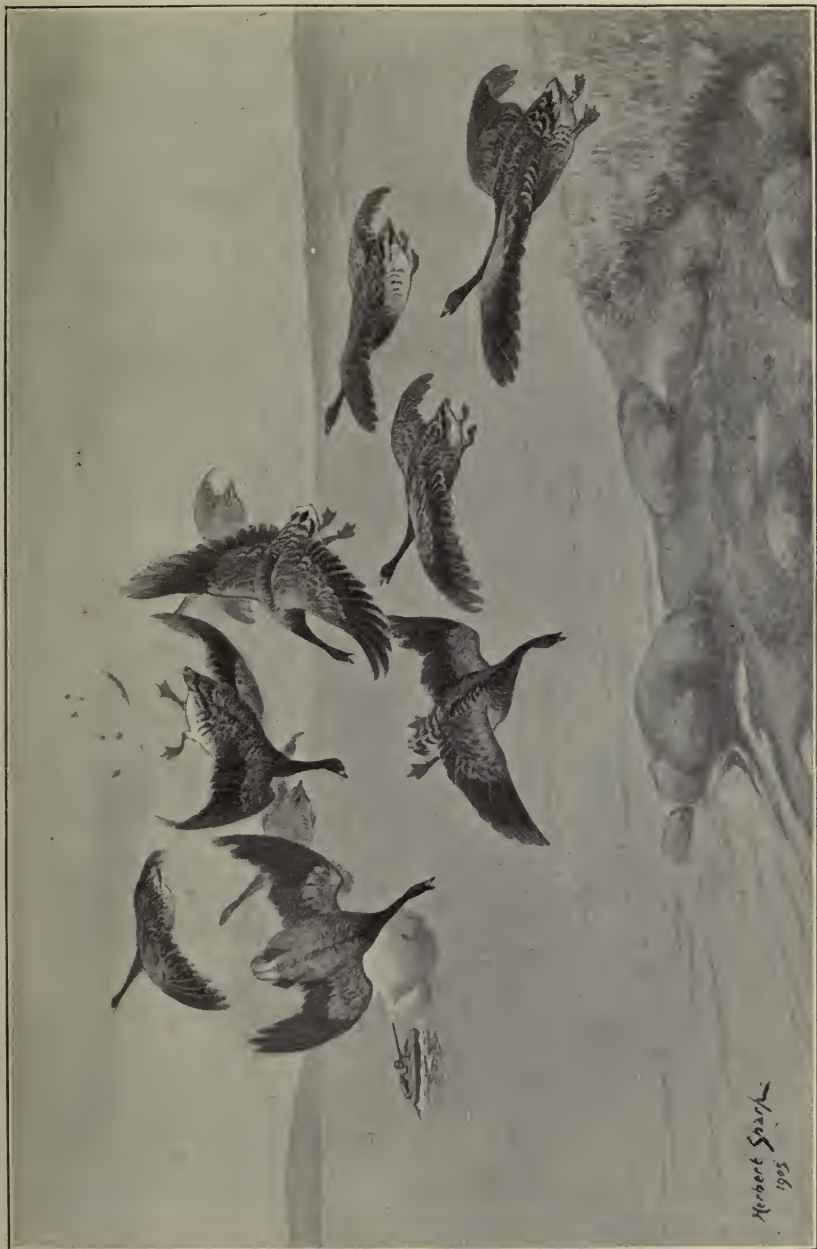
Right barrel. 211, 204, 192, do. = 202.

Here again there was no sign of balling ; all the patterns were fairly even in distribution, and some were really excellent.

Certain good properties possessed by the nitro powders are sufficient in themselves to compel the attention of wild-fowlers, and to create an earnest desire to see overcome any drawbacks to their use in heavy wild-fowl guns. However tenaciously we may cling to our good old friend black powder, and however distrustful of innovations sportsmen may be, it must nevertheless be more or less a rooted conviction with advanced wild-fowlers that for their sport also, as well as for game-shooting, the so-called smokeless powders are the explosives of the future. For the shooting of game the newer form of powder has long held the field, for if in practice it had not proved so regular as black, there are plenty of sportsmen who would still prefer to use it on account of its excellent properties in the way of lessened noise, smoke, and fouling. These and other important advantages or improvements, however much needed in the matter of game-shooting, are far more necessary as aids to success in the sister sport of wild-fowling, for,

as seasoned fowlers are well aware, noise tends to disturb and frighten away the fowl, whilst an excess of smoke too often prevents the prompt use of the second barrel, and at the same time discloses the gunner's location. Another important advantage is the comparative flamelessness of the nitro-compounds generally. For night shooting—and some of the best wild-fowl shooting in this country is obtainable only in the gloaming or at dead of night—the importance of this particular qualification will be at once perceived. I have frequently observed that fowl which rested undisturbed by the rousing boom and the reverberating echoes evoked by the discharge of a heavy punt-gun in the twilight, would quickly spring to the flash and shower of sparks sent skywards by the black powder from the overloaded gun of some old coast-gunner.

Recoil is another matter of vital importance to the users of big shoulder-guns. There would be many more users of big guns if it were not for recoil; for although, to a certainty, weight tells, still, after all, it is recoil that kills. Thus, weight is not the sole determining factor in fixing the limit as to the size of gun we may handle; for the weariness of a man tired by carrying a heavy load is as nothing compared with the feelings of one who has undergone a severe punching, and, in fact, become thoroughly demoralized by a heavy and violent recoil oft repeated. I have on various goose-shooting expeditions carried for many miles, over extremely rough ground, a 4-bore weighing three times as much as an ordinary 12-bore game gun, without experiencing a tithe of the discomfort experienced after being mauled and pounded by a severer kicking gun of half the weight.



A RAKING SHOT AT GEESE WITH THE SWIVEL-GUN.

It must be said, however, that to judge as to the weight and nature of recoil by one's feelings alone is apt to prove somewhat misleading; for in accordance with the state of the bodily health will be the sensation produced by a normal recoil. The man with a liver, or the shooter of highly nervous temperament, will be liable to suffer more discomfort from a moderate recoil than would a more slightly-built sportsman in robust health. On this head it may be mentioned that the shooter standing unflinchingly and firmly to his gun will suffer far less punishment from recoil than he who grasps his gun falteringly and holds it loosely against the shoulder. In the former case, man and gun, being, so to speak, in one piece, go back together; in the latter case the gun, having room for play, hits a sharp blow. All guns, too, it is well to observe, should be firmly embedded in the hollow of the shoulder, not against the arm, as one occasionally observes some imperfectly instructed gunners holding their guns.

For a number of years I have been carrying out numerous experiments, both at the target and on wild-fowl, with various nitro-compounds in shoulder wild-fowl guns. At first my ardour was considerably damped by serious irregularities of ignition, hang-fires being not infrequent. In later years the cartridge manufacturers have given increased attention to the ignition in 4-bore and 8-bore cases, and, I am bound to say, with happiest results. My trials have covered most varieties of the earlier type of nitro, the so-called "bulk" powder, the charge of which bulks the same, occupying the same space in the cartridge as black gunpowder, whilst at the same time weighing but half as much. Schultze, Amberite, E.C. No. 2., S.S., and Kynoch smokeless are

good examples of this class of powder, and I find that in shoulder wild-fowl guns of suitable construction these powders may be used with comfort and advantage. Black powders were invariably measured, and so may also the nitro-compounds specified above, provided always that due care is taken to insure accuracy by first weighing a charge or two, to see that the powder-filler measures the charge with exactitude.

It will be observed that in the table referring to shoulder wild-fowl guns already given, the powder charges specified are expressed in drachms, they in that case having reference only to black powder. Charges of nitro-compounds are spoken of as so many grains, and it is quite an easy matter to find the equivalent charge for black powder in a bulk nitro if we base our consideration on the fact that in 3 dr. of black powder there are 82 gr. Thus, the equivalent for this in a bulk nitro powder is 41 gr., and so it becomes patent that the 6 dr. black powder charge of an 8-bore is equalled by 82 gr., and the 9 dr. of the 4-bore by 123 gr. of a bulk nitro. With nitro-compounds of the condensed or concentrated class—Walsrode, Shot-Gun Rifleite, Ballistite, etc.—different conditions prevail, and here we must be guided by the charges recommended by the manufacturers.

One of the most satisfactory trials I have ever carried out at the target with a bulk nitro in a wild-fowl gun was with a heavy double 8-bore, in fact one of the new series mentioned in the previous chapter as being made by Messrs. Westley Richards. The results obtained were published in *The Field* at the time of trial, and, having the kind permission of the editor of that paper, I will reproduce them here as an excellent illustration of the performance of a consistently good, although not

extremely close, shooting gun. The following is a description of this gun, its charges, and my method of trial :—

A hammerless ejector double-barrel 8-bore, by Messrs. Westley Richards and Co. of London and Birmingham ; patent hand-detachable locks ; barrel length 34 inches, the rib hollow to one-quarter length of the barrel, the remainder of the rib sunk below the barrels ; weight under $13\frac{1}{2}$ lb. ; boring medium or three-quarter choke ; nitro-proved and regulated for a charge of 104 grs. of bulk smokeless powder and $2\frac{3}{4}$ oz. shot.

The major portion of this trial was made at the extensive shooting ranges of the London Sporting Park Company at Hendon, the accompanying charges being used :—

Cartridge Case : Kynoch "grouse," *i.e.* a brass-covered paper case, 4 inches long.

Powder charge : 100 grs. Kynoch smokeless.

NO. 2 SHOT ; 40 YARDS.

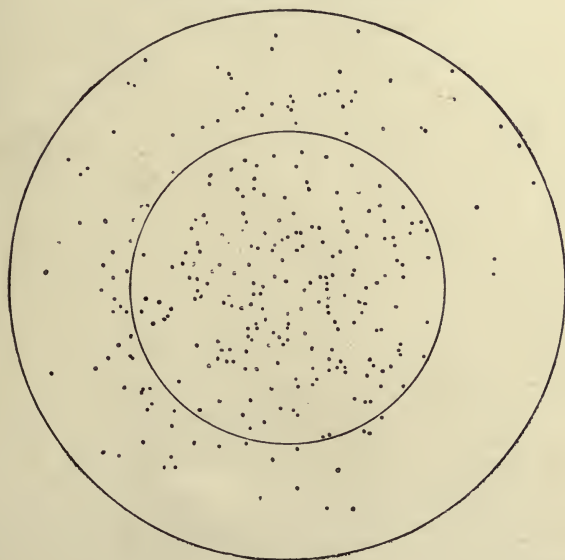


FIG. I.

Powder wadding: One thin waterproof card, one thick felt, one thin card.

Shot charge: $2\frac{3}{4}$ oz. of No. 2, counting 122 pellets to the ounce; $2\frac{3}{4}$ oz. BB. of 56 pellets per ounce.

Shot wadding: Stout card.

Targets: Large and of sheet-iron; on their whitewashed surfaces the pellet-marks were counted within circles of 40 inches and 72 inches diameter.

Ranges: 40 yards, 60 yards, and 80 yards. Photographs were taken of the patterns displayed by each size of shot at the various ranges, and diagrams are given.

NO. 2 SHOT; 40 YARDS.

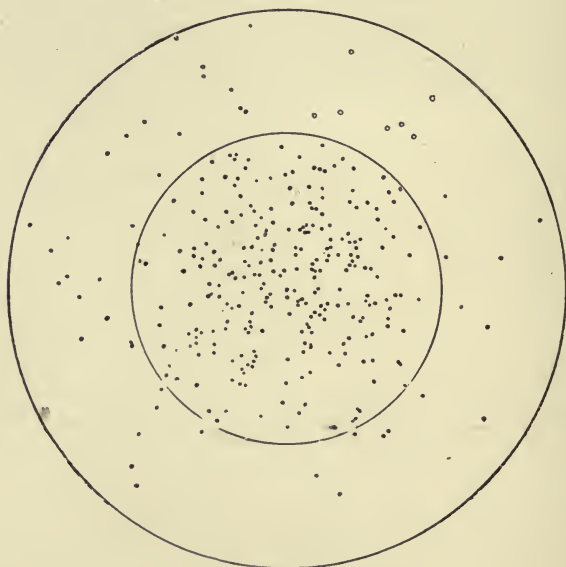


FIG. 2.

NO. 2 SHOT; 40 YARDS.

LEFT BARREL.		RIGHT BARREL.	
40" circle	72" circle	40" circle	72" circle
240	314	260	308*
253	319	237	306
338	309	269	301
272	331	264	316
261	316	249	310
<hr/>		<hr/>	
Averages 252	317	255	308

* Pattern represented in Fig. 2.

NO. 2 SHOT ; 60 YARDS.

LEFT BARREL.		RIGHT BARREL.		
40" circle	72" circle	40" circle	72" circle	
111	216	91	217*	
108	231	110	228	
97	229	107	221	
117	232	99	212	
103	226	109	209	
<hr/>		<hr/>		
Averages	107	226	103	221

*Pattern represented by Fig. 3.

NO. 2 SHOT ; 60 YARDS.

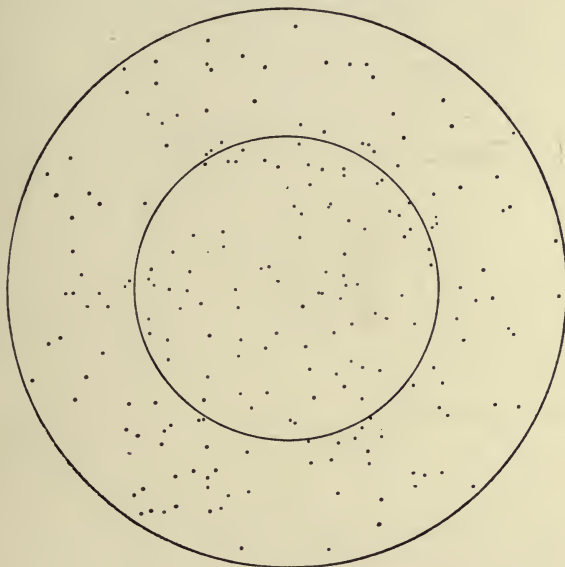


FIG. 3.

NO. 2 SHOT ; 80 YARDS.

	42	118	39	108
	44	117	47	113
	50	141	48	118
	42	109	54	114
	40	107*	46	127
Averages	<hr/> 43	<hr/> 118	<hr/> 46	<hr/> 116

* Pattern represented by Fig. 4—the lowest of the whole series.

BB. SHOT ; 40 YARDS.

LEFT BARREL.		RIGHT BARREL.	
40" circle	72" circle	40" circle	72" circle
107	151	104	153*
101	150	98	151
97	152	105	149
108	155	101	147
102	148	102	147
<hr/>		<hr/>	
Averages	103	151	102
			149

* Pattern represented by Fig. 5.

NO. 2 SHOT ; 80 YARDS.

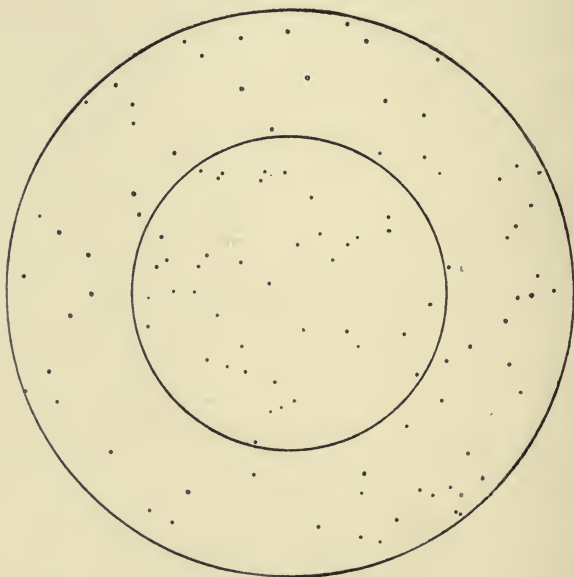


FIG. 4.

BB. SHOT ; 60 YARDS.

67	115*	50	116
59	111	61	116
64	114	49	112
72	118	67	111
58	107	59	124
<hr/>		<hr/>	
Averages	64	113	57
			115

* Pattern represented by Fig. 6.

BB. SHOT ; 80 YARDS.

LEFT BARREL.		RIGHT BARREL.	
40" circle	72" circle	40" circle	72" circle
34	70	29	64
30	79*	32	72
29	76	28	66
33	70	36	77
27	72	28	75
<hr/>		<hr/>	
Averages	30 73	30 70	

* Pattern represented by Fig. 7.

BB. SHOT ; 40 YARDS.

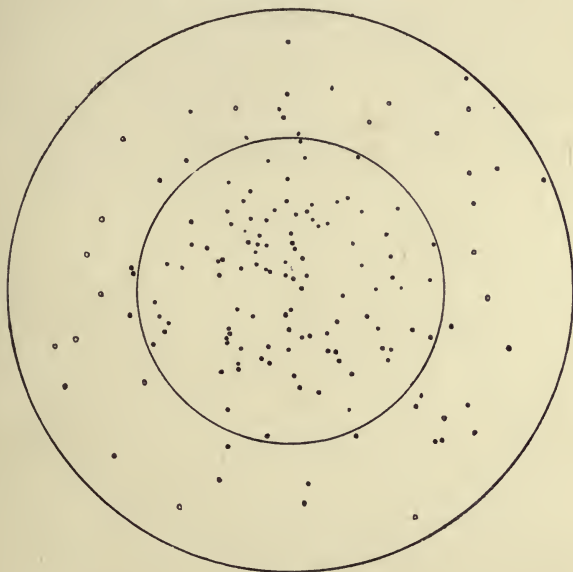


FIG. 5.

I should have liked to have obtained a more extended series of photographs of these shot patterns, but on the day of trial the weather was so wet and unsuitable that it was with the utmost difficulty that the accompanying series could be procured. As a matter of fact, the seven diagrams here given were all that could be obtained, and it is therefore easy to imagine that had the day been

BB. SHOT ; 60 YARDS.

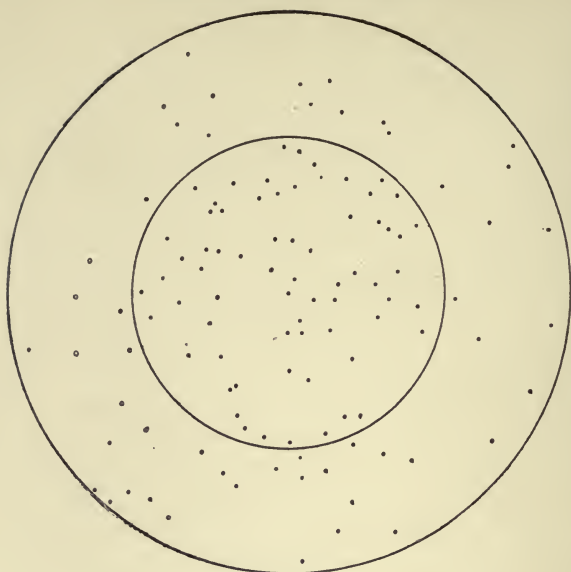


FIG. 6.

BB. SHOT ; 80 YARDS.

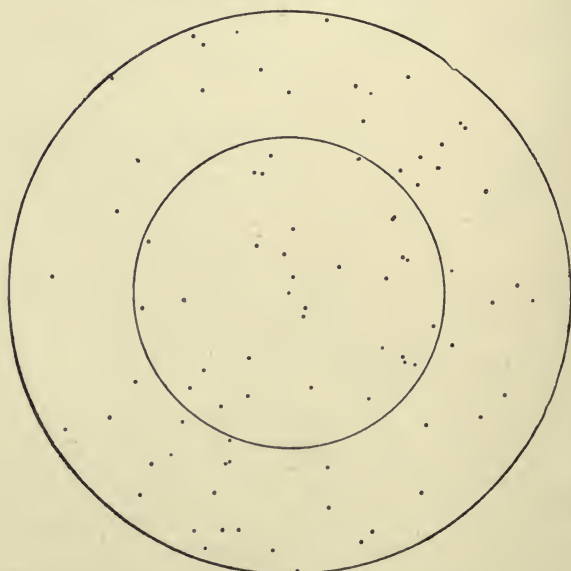


FIG. 7.

more favourable for photographing, a better selection might have been secured. It will, however, be conceded that these unpicked patterns show fairly well the general character of the shooting, affording ocular proof of the regularity and reliability of the performance of both gun and load at the three ranges. Such regularity of performance is, perhaps, the more remarkable in view of the fact that no time was spent in paving the way by trial of various sizes of shot and different powders, with the view to discover the best possible loads.

It is but fair to both gun and powder to mention that in not a single instance was that pattern photographed which gave the highest count of pellets within the 40-inch circle. Moreover, in describing the circles on the whitewashed targets, certain pellet-marks were unavoidably obliterated owing to the fact that an unusually thick-pointed scribe was used for the purpose of securing clearly-defined rings for photographing. Thus, in some instances, the patterns were reduced in this way by as many as seven or eight pellets. In Fig. 1 is given a second pattern, obtained with No. 2 shot, that is well-nigh perfect in respect of the display of pellets within the 40-inch circle; but, unfortunately, heavy rain fell as the camera was being got into position, and so washed out some of the outer pellet-marks. Still, as showing what may be done in the way of throwing evenly distributed patterns of large shot, this photograph was deemed to be worthy of reproduction.

Time did not permit of more than a few shots being fired to test the penetration. These, however, sufficed to show that a card-rack of special construction and altogether larger size than that in ordinary use would have to be constructed to ascertain the penetrative force

of the large shot used in the foregoing trial. At the 60 yards range the BB. shot went completely through thirty-one sheets in the rack. How much this implies may be gathered from the fact that a 12-bore with No. 6 shot at 40 yards may get through, on the average, about fourteen sheets in this rack, but in doing so there are several pellets that will not pierce the tenth sheet.

This particular 8-bore is the lightest that I have seen capable of throwing a charge so heavy as $2\frac{3}{4}$ oz. with absolute comfort to the firer. In fact, I should not hesitate to use 3 oz. of the larger sizes of shot—A, AA, or SSG, in this gun when shooting wild-geese. One frequently sees 8-bores weighing 15 lb. or over that are only chambered for a sufficient length of case to take $2\frac{1}{2}$ oz. of shot. About 16 lb. would seem to be the weight hitherto found necessary in a gun designed to carry $2\frac{3}{4}$ oz. of shot; and as such guns usually have barrels 36 inches long, we see in the gun under description two substantial gains: first, a reduction in length of barrel of 2 in.; and second, a lessening of the weight by $2\frac{1}{2}$ lb. Carrying so heavy a charge of large shot, a gun so powerful should in capable hands prove most destructive among geese, ducks, and other heavy fowl. For shooting from a punt or small sailing-boat, or for use on land where birds are numerous or fly at a great height, a gun of this type will prove helpful in securing heavy bags of fowl.

In the gun under consideration due pains have been bestowed upon the stocking. Weighty of course the gun is, but withal so well balanced and proportioned as to be perfectly manageable, and whilst possessed of ample strength of parts, is so nicely stocked as to handle and feel like a game gun.

The foregoing may be considered sufficiently close shooting for the general purposes of the wild-fowler. Many guns are made to shoot much closer than this gun ; and for shooting at extreme ranges where shots are taken at 100 yards or upwards, they certainly are highly advantageous. Mr. W. W. Greener, for many years a prominent maker of duck-guns, makes 8-bores that will throw a third of their charge within a 12-inch square at 40 yards. This is close shooting indeed, and with these extreme chokes I have been able to kill brent- and grey-geese, and other tough fowl, at remarkably long ranges in the open day.

There is no gainsaying the power of 4-bores of first-class construction and boring, when properly laid on at good-sized bunches of fowl. Large shot undoubtedly kills at tremendous ranges, greater by far perhaps than many people are aware, for in the small doses used in guns of narrow bore any good effects at long range are less seldom observed. In the 4-bore and guns of large calibre so many more pellets are carried that the killing of fowl at 80 yards to 100 yards becomes much more of a certainty. Some 4-bores that I have shot with have astonished me by their powers, shooting apparently as far and as strong as some punt-guns. There is room for the display of a good deal of skill and knowledge in the boring of these guns in order that they may throw the shot well together at long range, and in such manner—and this is of quite equal importance—that the gunner may be enabled to fire full charges with comfort. Certain guns that I have had, exhibited in marked degree this quality of keeping the shot well together ; and when firing from a boat I have frequently observed the shot sweep a remarkably narrow and clearly-defined

track upon the water at 90 and 100 yards. Certain sizes and charges of shot are thrown better than others, and for this reason a pound or two expended on cartridges for target experiments, to determine as to the most suitable charges, sizes of shot and methods of loading, will be money well expended by the owners of heavy wild-fowl guns. The knowledge thus gained will assuredly prove greatly helpful in furthering their sport, and in adding many ducks and geese to the bag in the course of a season's shooting.

Punt-gunning is not by any means a new sport, and yet few statistics are available relative to the target performances of punt-guns. It is also worthy of remark that nearly all previously published records of punt-gun trials are those obtained with black powder. Although it cannot be denied that our sable friend has proved both trustworthy and effective, it will surely come about that black powder must give way to a nitro-compound in those cases where breechloading punt-guns are employed. Certain of the nitros may be used with excellent result in the largest calibre shoulder-guns, and thus it is but a step further, a natural transition in fact, to secure their services for use in punt-guns. Of a certainty, the larger the gun the more must any gain in the direction of reduced noise, smoke, recoil, and fouling be appreciated.

The Smokeless Powder Company may, I believe, justly claim to be pioneers in the direction of getting out a nitro-compound suitable for use in punt-guns. Some few years ago, the late Mr. J. D. Dougall then being manager, experiments were carried out with this Company's S. R. Martini-Henry rifle powder in heavy swivel-guns. This particular form of powder is slow in

combustion, the charge for punt-guns of $1\frac{1}{4}$ in., $1\frac{3}{8}$ in. and $1\frac{1}{2}$ in. bore, being about one-third by weight of the load of black powder. It is evident that fairly good results can be obtained with it in practice, for, I am informed by Mr. Duff Grant, the present manager of the Smokeless Powder Company, that orders are now received from gunners who use this S. R. powder in their punt-guns. It is plain, however, that a great stride forward has recently been effected, for good shooting is now obtainable with the powder known as "Rifleite '303" made by the same firm. This powder has water-proof properties which in themselves form strong recommendation for its use afloat, for wild-fowlers, whose sport is nothing if not humid, will necessarily incline to a powder possessed of so excellent a qualification as imperviousness to moisture. It is claimed for '303 Rifleite that not only will its shooting qualities remain uninjured by moisture in the atmosphere, but that actual immersion in water does not injuriously affect them.

In April 1897, at the invitation of Mr. Duff Grant, I visited the Smokeless Powder Company's manufactory at Barwick, Herts, to witness a trial of '303 Rifleite in a punt-gun. The gun used was made by Messrs. Moore and Grey, Piccadilly, W. ; it weighed 75 lb. with breech mechanism, and had a choked barrel 7 ft. 2 in. long. The cartridge-cases used throughout this trial deserve some mention. They were made up as required from plain tubes of brown paper 8 in. long, these being gripped securely by a screw on to a cartridge-base patented by Messrs. Moore and Grey, the base of this arrangement fitting into a dove-tailed groove in the breech-block of the gun. Ignition was satisfactorily accomplished in this case by the use, simply, of one of

Messrs. Eley Bros'. '380 brass cases containing 16 gr. of pistol-powder. All charges of both powder and shot were carefully weighed, and the pellets per ounce of the shot ascertained. The conditions of trial and the result obtained with '303 Rifleite, and with black powder, for purposes of comparison, are appended:—

NITRO POWDER. 60 YARDS.

Punt-Gun: by Messrs. Moore and Grey, weight and dimensions as given.

Cartridge-case: M. and G.'s 8 in. tube with patent base.

Primer: Eley's '380 long, 16 gr. pistol-powder.

Powder charge: $1\frac{1}{4}$ oz. '303 Rifleite.

Shot charge: 16 oz. of sizes A., AA., 1., and 2.

Wadding: on powder, two and a half felt wads measuring $\frac{5}{8}$ in. $\times 1\frac{3}{8}$ in.; on shot, a stout card.

Turnover: about $\frac{1}{4}$ in.

Target: iron plate 6 ft. \times 6 ft.

Size of shot.	Pattern.	Velocity at 10 yards in feet per second.
A.	663	1329
"	647	1329
"	573	1373
AA.	565	1396
"	592	1384
No. 1.	951	1339
" 2.	1267	1373

The 16 oz. of A. shot contained 832 pellets; of AA. 752 pellets; of No. 1, 1408 pellets; and of No. 2, 1776 pellets. A more regular series of patterns than were here displayed I do not recollect to have seen made by any punt-gun. The distribution of the pellets on the plate was remarkably even, and in one or two instances it was noticeable that the shot had been disposed with almost mathematical precision. Of course such patterns as these are decidedly close, too close in fact for the ordinary purposes of the punt-gunner in the daytime, and far too close for general night work.

BLACK POWDER. 60 YARDS.

Punt-Gun: same as in previous trial.

Cartridge-case: do. do.

Powder: $2\frac{1}{4}$ oz. "Colonel Hawker's Punt-Gun," made by Messrs. Curtis and Harvey.

Shot : 14 oz. of sizes A., AA., and No. 1.

Wadding : Two felts on powder, one card over shot.

Turnover and target, as before.

Size of shot.	Pattern.	Velocity.
A.	456	1384
AA.	441	1361
No. 1.	593	1260

In this trial the 14 oz. of A. shot used contained 728 pellets ; the 14 oz. AA., 658 pellets ; and the 14 oz. No. 1 contained a total of 1234 pellets. The one regrettable incident in connection with this trial was the fact that, by reason of the extra room required by the black powder, as compared with the Rifleite in the previous trial, a reduced charge had to be used.

Half-a-dozen shots were then fired with the same gun at 80 yards, the conditions as to method of loading and target being precisely as before. As however time did not permit of the fixing up of the wires and making the necessary arrangements for the taking of chronographic records, the shot velocities are not recorded in this case ; indeed, they were scarcely necessary seeing that little variation need be anticipated from those previously recorded :—

NITRO POWDER. 80 YARDS.

Size of shot.	Pattern.
A.	338
No. 1.	487
No. 2.	654
do.	614

BLACK POWDER. 80 YARDS.

Size of shot.	Pattern.
A.	272
No. 1.	331

I am convinced that a target 6 ft. square is not large enough for the purposes of such test as this, the whole of the surface being covered with pellet-marks at 60 yards and upwards. . It is not by any means so simple a task as it may appear to get the shot thrown fairly on to a target of this size ; an error of but a fraction of an inch in aiming the gun may mean a good deal at the other end of the 60 or 80 yards range. Naturally, particular care was taken in sighting this gun, three persons assisting thereat, in order to make assurance doubly sure. In the result it was found that this gun is a good and consistent shooter, for shot after shot was thrown by it upon the target with regularity and precision.

Having no pressure-gauge of this large size available, the pressures given off by each powder could not be ascertained. From the general behaviour of the gun on both fixed and loose firing-stands, as well also from the state of the cartridge-cases after firing, I certainly was impressed with the fact that, in many respects this '303 Rifleite nitro powder, used under the foregoing conditions, approaches nearer in the direction of an ideal punt-gun powder than does our aged and trusty servant "Col. Hawker's punt-gun powder." A comparison of the cartridge-cases after firing showed that in every instance the black powder exerted heavier breech pressures than the '303 Rifleite. In some instances portions of the strong paper tube of the cartridge-case were blown out of the barrel by black powder, but there was no instance of this occurring with the nitro powder. Moreover, when compared with the nitro cases, the black powder cartridge-cases after firing bore on their soft brass parts and also on their paper tube the unmistakable impress of subjection to greater pressure.

Other important gains accruing from the use of the Rifleite were the lessening of the smoke and noise, and the very great reduction of fouling in the barrel and breech of the gun as compared with the black powder. In every instance after the discharge of the latter, a dense, greasy mass of fouling was found to have accumulated round the base of the cartridge, and even to have insinuated itself for some little distance up the threads of the screw in the breech-plug. In no instance was any weakness of shooting displayed by either powder, and, on standing some little distance to one side of the gun on firing, the speed of the pellets travelling up to the target was remarkable. At the 60 yards range their arrival on the sheet-iron plate appeared to be well nigh simultaneous with the report of the gun. All the pellets were flattened out to the thickness of stout brown paper on striking the target.

A further interesting comparative trial of black and nitro powders in a punt-gun, made at the Barwick powder factory, deserves to be recorded. This was as follows :—

NITRO POWDER. 60 YARDS.

Punt-Gun : by Messrs. Holland and Holland, New Bond St., W.
Bore $1\frac{1}{4}$ in.

Cartridge-case : 10-in. paper.

Primer : a '300 brass case and fine powder.

Powder : '303 Rifleite.

Shot : size A. of 52 pellets to the ounce.

Wadding: card, felt, $1\frac{1}{2}$ in. oakum, felt and card placed as named.

Target: 6 ft. \times 6 ft.

Powder, oz.	Shot, oz.	Pattern.	Velocity in ft. per sec.
$1\frac{3}{8}$	12	427	1260
$1\frac{3}{8}$	16	614	1299
$1\frac{1}{2}$	16	623	1319
"	"	430	1361

BLACK POWDER. 60 YARDS.

The same gun shot on the same day, under precisely similar conditions as to target, range, cartridge-case and size of shot, but with "Colonel Hawker's Punt-Gun" black powder.

Powder, oz.	Shot, oz.	Pattern.	Velocity in ft. per sec.
$2\frac{1}{4}$	12	372	1093
$2\frac{1}{4}$	14	309	1160
$2\frac{3}{4}$	16	478	1260

These figures go to show in remarkable degree the very striking superiority of this nitro-compound over black powder as here used. This becomes the more apparent when it is stated that the heaviest charge of the nitro did not to all appearance give pressures equal to black, whilst imparting to the pound of shot a velocity higher by 100 ft. per second.

With respect to the trial of nitro powders in punt, or, for that matter, in any guns, it is highly essential to the attainment of good shooting that a proper and uniform amount of resistance should be offered to the powder in the way of wadding, weight of shot, and turnover of case. All matters involving an increase or decrease of the shot-load; any great change in the method of priming, or in the powder-charge, should be intelligently approached, and the effect of the alteration determined by actual trial at the target.

CHAPTER IV

AMMUNITION : POWDER, CAPS AND CARTRIDGE-CASES, WADDING, SHOT

GUN-construction as now practised is a totally different craft from the gun-making of sixty or seventy years ago, the time that fine old sportsman, Colonel Peter Hawker, was writing about guns, and the equally famous Joe Manton was building them. Between the flint-lock and percussion-cap guns of that period and the single-triggered, double hammerless, automatically-cocking and cartridge-ejecting breechloader of to-day there exists dissimilarity as great as betwixt the old Rocket and the modern compound locomotive. As with the arm, so with the ammunition. Fifty years ago the gun-maker had alone the thoroughly-tried black powder to deal with ; now, at the commencement of this twentieth century, he is surrounded by a crowd of propellant explosives, each one of the group being a law unto itself, differing from the rest in nature and appearance as well as in method of use. Still, in all probability, the evolution of the modern nitro-compound is far from complete ; startling changes must yet be looked for.

Numerous questions are now involved in the loading of cartridges with the various powders ; complexities in the matters of ignition, suitability of cartridge-case

and of wadding, and extreme niceties in respect of weight of charges, depth of turnover, and so forth, rendering the matter somewhat intricate and bewildering to the sportsman. Naturally, he is moved to inquire whether so many methods of application are really necessary to encompass the same end, or whether the powder-manufacturers designedly give to their powders certain distinctive properties and features in order to endow them with a character all their own.

Compared with black powder the nitro-compounds generally conduce far more to the comfort and success of the sportsman. As a consequence, the majority of game-shooters in this country now use one or other of these so-called smokeless powders in preference to the older explosive. Although the latter is not so safe to handle and to have in quantity as are the former, it must, in all fairness, be said that, moisture apart, black powder develops its energy with greater constancy, it being less affected by variations in loading than are nitro-compounds generally. The smokeless powders when unconfined have a much less violent explosive effect than has black powder burnt under the same conditions. In fact, a lighted match applied to a loose handful of the Schultze or E.C. nitros would have no more startling result than a very rapid burning. Black powder, however, is not to be played with in this way, combustion in its case being so immediate that explosion is the only term to be applied thereto.

It will be gathered from this illustration that nitro powders are largely dependent upon the amount and nature of the resistance offered to them within the gun-barrel for the due development of their propulsive forces. It is therefore at once apparent as the

proverbial pikestaff that cartridge-loading should be conducted on highly intelligent and careful lines if the best and most regular results are to be obtained with modern nitro-compounds. There are various ways in which full or, possibly, increased charges of these powders may be employed without developing a due amount of energy. I well remember several years ago loading some 12-bore cartridges with full and even extra charges of a certain well-tried nitro powder, but with lessened charges of shot. One batch contained a three-quarter charge and the other merely half a charge of shot. This was done on the supposition that thereby a tremendously high velocity would be imparted to the shot; these cartridges being designed especially for quick shooting at rabbits or woodcock in thick covert, and for duck-flighting at close quarters in the half light. Experience soon taught me that, however pretty in theory, this little plan did not work out at all well in practice, as I could not get along with these cartridges nearly so well as with those containing complete loads of shot. This, doubtless, was owing to the lessened amount of resistance offered to the powder by the reduced shot-charge, the friction of an extra wad or two passing out of the cartridge-case and along the barrel not offering a resistance equal to the weight of the missing half-ounce of shot; thus the full explosive energy of the powder was not developed.

The method pursued in the granulation of a powder has an all-important influence upon its readiness to ignite and the speed of its combustion. With black powders, the smaller the grain the quicker the ignition and combustion; and this rule holds good to a considerable extent with the nitros. Uniformity in size

and in the density of the grains are important matters in determining the regularity of results obtainable with any powder. A powder having a considerable percentage of small grains, or one of friable nature that pulverizes much, cannot be expected to give the most regular results. With powders of this character an undue proportion of the dust or small grains will, now and again, be loaded into the cartridge-case; this may bring about so rapid an explosion that the shooter will be shaken up most thoroughly, and the gun subjected to greater pressure than is advisable. Mixed grain powder may answer so long as the grains can be kept duly mixed; but in practice I find that this cannot be insured with powders any more than with the mixed shot recommended by some faddists for use in game guns.

Sportsmen are now in possession of two definite types of smokeless powder, the so-called bulk powder and the newer concentrated or condensed powder. The first is designed to occupy the same space as black powder in the cartridge-case, although only weighing about half as much. There are several varieties of both forms now on the market, many having proved excellent and reliable sporting explosives when properly handled; they, however, require to be differently treated in many ways, the members of each group varying considerably in composition and behaviour one from another. That form of cartridge-case, kind of cap, method of wadding, and turnover of cartridge-case best suited to each individual powder must be used, and care generally be exercised in following out the directions given by the maker of each powder.

We have passed through the somewhat troublous

period of transition from black powder to the smokeless explosives, and we now appear to be involved in the momentous question of choice between the old and the new forms of the last-named explosive. We may trust to time to adjust this matter. Probably, the chief obstacle to the adoption of the small bulk or concentrated nitro has been the conservatism of the gun-maker and the cartridge-case manufacturer. These autocrats of the gun world said in effect: "We will not suffer this thing, for it will upset our most cherished notions and the law that we have laid down that all nitros shall occupy the same space in the cartridge as did our dear departed friend black powder." Still, after all, a policy of progression is not antagonistic to a proper spirit of conservatism, we must not sit down and mourn the King dead and neglect to crown the King living. As time progressed, it became apparent that the period of mourning for good old black powder, as evidenced by the too slavish following of his bulky proportions, must be ended, the calls for attention made by the newest, the concentrated form of explosive, becoming altogether too loud and too frequent to be longer ignored. Then the first compromise with the inevitable was effected in the shape of the coned-base case and by the introduction of the 2-inch cartridge. This, of course, is but a make-shift expedient, gun-makers hesitating to boldly declare themselves in favour of the nitro powder of lessened bulk and discard its immediate predecessor of large proportions.

I know that there is a feeling averse to the general adoption of the 2-inch standard of length for the chambers of game guns. But, I would ask, why not dispense altogether with chambers which are an obvious

source of weakness in a gun? I think the time must come when that danger-trap, the cone or shoulder at the end of the cartridge-chamber, will be dispensed with, and a sufficient powder energy developed by means of wadding of increased size—say 10, or $10\frac{1}{2}$ gauge in 12-gauge cases—or by certain other means. I feel sure that 12-bores on these lines, having 24-inch barrels, and weighing no more than $6\frac{1}{4}$ lb. or $6\frac{1}{2}$ lb. would throw $1\frac{1}{4}$ oz. of No. 5 shot, a most deadly load to use on game, with absolute comfort to the shooter, and would prove an excellent form of weapon for the purposes of modern sport—the shooting of driven grouse, partridge, and pheasant. In these coneless guns any length of cartridge, and bulk or concentrated powder, could be used at will, and they would, I believe, possess greater power for their size and weight than guns as now made with chambers.

Most sportsmen prefer to buy their cartridges loaded, and, in a general way, this is the better plan. Unless the amateur has previously gained some little insight into the methods of cartridge-loading, he may take it for granted that without quite exceptional care bestowed upon the ramming of wads, crimping of cases, and weighing of charges, his hand-loaded cartridges will compare unfavourably for regularity of shooting with the machine-loaded cartridges turned out by the professional cartridge-loader. In loading cartridges care must be taken both in seating the wadding squarely, and in maintaining an even pressure in so doing, throughout the series. The latter cautionary remark applies especially to powders that are more or less compressible. A powder of yielding nature may have its bulk reduced considerably by pressure

in loading, and this may adversely affect its action. During recent years powder-manufacturers have succeeded in overcoming this disability to a great extent by a general hardening of the grain of all compressible powders. Several of the newer forms of nitro, the concentrated, are so hard of grain as to be practically incompressible.

It is also essential, to insure good shooting, that really good wadding should be employed, for inferior wadding usually varies a good deal in density and uniformity of texture as well as in thickness. With wadding of this kind it is impossible to maintain an even length in the loading of cartridges, the variation in compressibility or in thickness of the wadding affecting the pressure put upon it, so that a variable amount of cartridge-tube is left for turning in. This question of turnover or crimping of the case is of vital importance, as any departure from the proper standard is liable with several nitros to affect the shooting to a considerable extent. The resistance offered by an insufficient turnover does not suffice for the development of a proper powder-energy. On the other hand, an excessive turnover assists the powder to develop its forces close to the breech of the gun, and to an extent greater than is requisite for the due propulsion of the shot.

The amount of explosive force exhibited by a nitro-compound is liable to considerable variation according to the nature and amount of the resistance it encounters at the moment of explosion. The resistance may be increased from the normal by, amongst other things, the use of heavier charges of shot, or of similar charges of a smaller size of shot, by very tight wadding, or,

as remarked, by a deep and extremely tight turnover of the case. Any of the foregoing excesses will have the effect of substantially increasing the initial pressure, the pressure at the breech-end of the barrel, set up at first impact of explosion. In this connection I may remark that a high shot-velocity is not a necessary corollary of a high breech-pressure. A good powder, properly loaded, will not exhaust its energies within the breech of the gun, but will continue to evolve and expand its gases from that point right up to the muzzle of the piece.

Diameter of bore has a considerable bearing on this question of powder pressures. The smaller the bore the greater the pressure, other things being equal. This, partly by reason of the closer confinement of the powder and also by the fact that the elongation of the column of shot excites greater frictional resistance. A service-charge of powder may generate a safe working pressure of about three tons per square inch in the breech of a 12-bore shot-gun. With proportionate charges in 16, 20, and 28-bores, this pressure may be considerably exceeded without overstepping the bounds of safety; this, by reason of the fact that the restricted internal area of these guns provides less ground for the heightened pressure to play upon. Smokeless powders show greater sensitiveness with regard to their ignition than do black powders generally; and, as remarked, the breech pressures generated by the former can be increased or diminished to some extent by varying the force or intensity of the detonating flash. Lengthy exposure to the sun or heat of any kind may have the effect of drying a powder sufficiently to cause it to develop undue or even

dangerous pressure. Moisture, of course, exerts an adverse influence upon the action of a powder, in a direction entirely opposite to that last named. Powder-manufacture, however, has advanced several stages in recent years, for some of the new explosives are little affected either by drying or by moisture. Nitros of the gelatinous form, especially, are practically impervious to damp, so much so in fact that after actual immersion in water their shooting properties are not appreciably affected.

The day for rule-of-thumb methods in respect of guns and their charges has passed beyond recall. On looking at the intricate mechanism of modern sporting arms, the scientific exactitude of their chambering, their cartridge-case and wadding; as, also, the chemical knowledge displayed in the production of highly-sensitive explosives, both of ignition and propulsion, it is at once apparent that gun-making and cartridge-loading must of necessity be conducted on a highly-scientific basis. Variations amounting to but a few thousandths of an inch in the measurement of cartridge or of cartridge-chamber may materially affect the shooting of guns. In recent years, gun-makers have come to fully recognize this fact, and the need for remedial measures, with the result that great improvements have recently been effected in the way of standardization of the chambers and cartridge-cases of guns of each denomination. The loading of cartridges has at length been brought to a great pitch of perfection by the introduction of highly-ingenuous mechanical appliances for carrying out the work evenly, and on the large scale requisite in large cartridge-manufacturing and loading factories such as those of Kynoch of Birmingham, or

Eley's of London, where millions of cartridges are annually loaded, or in those gun-makers' establishments where hundreds of thousands are turned out year by year. Electricity, or other power, has been usefully harnessed to the work of turning in the cases, and these turnover machines, running, in many instances, at a speed of 1000 or more revolutions per minute, thereby accomplish the work with an evenness and nicety of finish not previously attained.

Sporting explosives of the day may be classified under four heads—

1. The black gunpowders, of which the "Diamond Grain" of Messrs. Curtis and Harvey and the "Nonpareil" of Messrs. Kynoch are probably the most familiar and reliable examples.

2. The so-called "bulk" nitro-compounds, a not too explicit title, perhaps, which comprises those bulking the same as black gunpowder. That is to say, a 3-dr. measure of these nitros will occupy the same space in a 12-bore cartridge as does black powder. At the same time, the weight of these powders is practically half that of black, or somewhere about 41 grains for the 3-dr. charge.

3. Is a group of nitros intermediate, as regards weight, betwixt the bulk and the concentrated classes. To this class, for lack of more specific title, the term "33-grain nitro" has been applied. This, by reason of the fact that whilst filling the cartridge-case to the same extent as the bulk powders, their weight is, practically, 33 grs. for the 3-dr. measure.

4. Includes the concentrated or condensed section of nitros, a class independent of the rest, in so far as measurement and weight of charge is concerned.

Of this class Ballistite is a good example, the ordinary 12-bore charge of this powder being but 26 grains.

For several years past the editor of the *Sporting Goods Review*, Mr. E. H. Stone, has issued an authoritative series of loading instructions for the sporting nitro-compounds, and through the courtesy of this gentleman I have been enabled to compile therefrom the accompanying particulars of the charges of the several powders now recommended for various gauges of the shot-gun. (See p. 77—80.)



AFTER MORNING FLIGHT.

Name of Powder.	Gauge of Gun.	Length of Cartridge-Case in Inches.	Powder Charge in Grains.	Shot-load in Ounces.
Amberite, Cannonite (No. 2 Coarse Grain), and Ruby.	8	$3\frac{1}{4}$	80	$2\frac{1}{4}$
	10	$2\frac{7}{8}$	50	$1\frac{1}{2}$
	12	$2\frac{3}{4}$	47	$1\frac{1}{4}$
	12	$2\frac{5}{8}$	42	$1\frac{1}{16}$ to $\frac{1}{8}$
	12	$2\frac{5}{8}$	40	1
	16	$2\frac{5}{8}$	36	1
	20	$2\frac{1}{2}$	33	$\frac{7}{8}$
	24	$2\frac{1}{2}$	28	$\frac{3}{4}$
Ballistite.	10	$2\frac{5}{8}$	32	$1\frac{1}{2}$
	12	$2\frac{1}{2}$	24	1
	12	2	24	1 *
	12	$2\frac{1}{8}$	26	$1\frac{1}{16}$
	12	$2\frac{3}{8}$	28	$1\frac{1}{8}$
	12	$2\frac{3}{4}$	29	$1\frac{1}{4}$
	12	3	31	$1\frac{1}{4}$
	16	$2\frac{1}{8}$	22	1
	20	$2\frac{5}{8}$	20	$\frac{3}{4}$
	20	$2\frac{3}{4}$	20	$\frac{7}{8}$
	28	$2\frac{1}{2}$	16	$\frac{5}{8}$
Cooppal No. 1 Smokeless Granular.	10	$2\frac{5}{8}$	49	$1\frac{1}{2}$
	12	$2\frac{3}{4}$	46 to 49	$1\frac{1}{4}$ to $1\frac{3}{8}$
	12	$2\frac{5}{8}$	45	$1\frac{1}{8}$ to $1\frac{1}{4}$
	12	$2\frac{5}{8}$	42	1 to $1\frac{1}{8}$
	16	$2\frac{3}{4}$	42	$1\frac{1}{8}$
	16	$2\frac{5}{8}$	38	$\frac{7}{8}$ to 1
	20	$2\frac{3}{4}$	38	$\frac{7}{8}$ to 1
	20	$2\frac{1}{2}$	35	$\frac{3}{4}$ to $\frac{7}{8}$
	24	$2\frac{1}{2}$	28	$\frac{3}{4}$

* Nobel's "Parvo" Cartridge.

Name of Powder.	Gauge of Gun.	Length of Cartridge-Case in Inches.	Powder Charge in Grains.	Shot-load in Ounces.
Cooppal, No. 2 (Smokeless Leaflet).	10	$2\frac{5}{8}$	32	$1\frac{1}{4}$ to $1\frac{1}{2}$
	12	$2\frac{3}{4}$	32	$1\frac{1}{4}$
	12	$2\frac{1}{2}$	27	1 to $1\frac{1}{8}$
	12	2	26	1
	16	$2\frac{1}{2}$	25	1
	20	$2\frac{1}{2}$	21	$\frac{7}{8}$
E.C. No. 3 (Improved E.C.).	4	4	90	3
	8	$3\frac{1}{4}$	60	2
	10	$2\frac{5}{8}$	40 to 44	$1\frac{1}{2}$
	12	$2\frac{3}{4}$	33	$1\frac{1}{8}$
	12	$2\frac{1}{4}$	38 to 40	$1\frac{1}{4}$
	16	$2\frac{3}{4}$	30	$\frac{7}{8}$
	20	$2\frac{3}{4}$	26	$\frac{3}{4}$
	28	$2\frac{1}{2}$	20	$\frac{1}{2}$
Empire Powder.	12	$2\frac{1}{2}$	33	1 or $1\frac{1}{8}$
	12	$2\frac{3}{4}$	38	$1\frac{1}{4}$
	16	$2\frac{1}{2}$	26	1
	20	$2\frac{1}{2}$	22	$\frac{3}{4}$
Henrite.	12	$2\frac{1}{2}$	33	1 to $1\frac{1}{8}$
	12	$2\frac{3}{4}$	35	1
	12	$2\frac{1}{4}$	35	$1\frac{1}{4}$
	16	$2\frac{3}{4}$	26	1
	20	$2\frac{1}{2}$	23	$\frac{3}{4}$ to $\frac{7}{8}$
Imperial Schultze.	8	$3\frac{1}{4}$	61	2
	12	$2\frac{3}{4}$	37	$1\frac{1}{16}$
	12	$2\frac{1}{2}$	33	$1\frac{3}{8}$
	16	$2\frac{1}{2}$	28	$\frac{7}{8}$
	20	$2\frac{1}{2}$	26	$\frac{3}{4}$

Name of Powder.	Gauge of Gun.	Length of Car- tridge-Case in Inches.	Powder Charge in Grains.	Shot-load in Ounces.
Kynoch (Smokeless Sporting).	10	2 $\frac{5}{8}$	49	1 $\frac{1}{2}$
	12	2 $\frac{1}{2}$	42	1 $\frac{1}{8}$
	12	2 $\frac{1}{2}$	45	1 $\frac{1}{4}$
	12	2 $\frac{3}{4}$	47	1 $\frac{1}{4}$
	14	2 $\frac{1}{2}$	40	1
	16	2 $\frac{1}{2}$	35	1
	20	2 $\frac{1}{2}$	30	1 $\frac{3}{8}$
	24	2 $\frac{1}{2}$	28	1 $\frac{3}{4}$
	28	2 $\frac{1}{2}$	24	1 $\frac{5}{8}$
Mullerite (Leaflet).	10	2 $\frac{1}{2}$	36	1 $\frac{1}{2}$
	12	2 $\frac{1}{2}$	33	1 $\frac{1}{8}$
	12	2 $\frac{3}{4}$	35	1 $\frac{1}{4}$
	16	2 $\frac{1}{2}$	27	1
	20	2 $\frac{1}{2}$	24	7 $\frac{7}{8}$
Normal.	12	2 $\frac{3}{4}$	34 to 36	1 $\frac{1}{4}$
	12	2 $\frac{1}{2}$	32 to 34	1 $\frac{1}{8}$
	16	2 $\frac{1}{2}$	24 to 26	7 $\frac{7}{8}$
Schultze.	4	4	112	3
	8	3 $\frac{1}{4}$	77	2 to 2 $\frac{1}{4}$
	10	2 $\frac{3}{8}$	49	1 $\frac{1}{2}$
	12	2 $\frac{1}{4}$	47	1 $\frac{1}{4}$
	12	2 $\frac{1}{2}$	45	1 $\frac{1}{8}$
	12	2 $\frac{1}{2}$	42	1, 1 $\frac{1}{8}$, 1 $\frac{1}{8}$
	14	2 $\frac{1}{2}$	39	1
	16	2 $\frac{1}{2}$	36	1 $\frac{1}{8}$
	20	2 $\frac{1}{2}$	31	1 $\frac{1}{8}$
S.S.	10	2 $\frac{5}{8}$	44	1 $\frac{1}{2}$
	12	2 $\frac{3}{4}$	41	1 $\frac{1}{4}$
	12	2 $\frac{1}{2}$	38	1 $\frac{1}{8}$
	14	2 $\frac{1}{2}$	37	1 $\frac{1}{8}$
	16	2 $\frac{1}{2}$	35	1 $\frac{1}{8}$
	20	2 $\frac{1}{2}$	32	1 $\frac{1}{8}$
	24	2 $\frac{1}{2}$	26	3 $\frac{3}{4}$
	28	2 $\frac{1}{2}$	22	5 $\frac{5}{8}$

Name of Powder.	Gauge of Gun.	Length of Cartridge-Case in Inches.	Powder Charge in Grains.	Shot-load in Ounces.
Shot-gun Rifleite.	10	$2\frac{5}{8}$	44	$1\frac{1}{2}$
	12	$2\frac{3}{4}$	41	$1\frac{1}{4}$
	12	$2\frac{3}{4}$	37	$1\frac{1}{8}$
	14	$2\frac{1}{2}$	35	$1\frac{1}{10}$
	16	$2\frac{1}{2}$	32	$1\frac{1}{16}$
	20	$2\frac{1}{2}$	29	$1\frac{3}{16}$
	24	$2\frac{1}{2}$	23	$1\frac{3}{16}$
	28	$2\frac{1}{2}$	20	$1\frac{3}{8}$
Walsrode, Anglo- Walsrode (Smokeless and Water- proof).	12	2 (special cap)	26 to 28	1 *
	12	$2\frac{1}{2}$ „ „	28 to 30	$1\frac{1}{8}$
	12	$2\frac{3}{4}$ (medium cap)	31	$1\frac{1}{4}$
	12	$2\frac{3}{4}$ „ „	29	$1\frac{1}{8}$
	16	$2\frac{3}{4}$ „ „	27	1
	20	$2\frac{3}{4}$ „ „	25	$\frac{3}{4}$ to $\frac{7}{8}$
Universal Walsrode.	12	$2\frac{1}{2}$	33	$1\frac{1}{16}$
Wildfowling Ballistite.	4	4	88	3
	8	$3\frac{1}{4}$	60	2
	10	$2\frac{5}{8}$	45	$1\frac{1}{2}$

* Lancaster's "Pygmy" Cartridge.

It is essential that special caps should be used for the ignition of Ballistite powder. With the exception of Walsrode in certain forms of case, the rest of these explosives ignite well with the cap termed "medium" by the manufacturers. It is essential that Ballistite should be used in cases specially coned or cupped in their bases, as also must Shot-gun Rifleite.

Since the foregoing list was compiled another new powder has made its appearance. This is of the 33-grain type, and the name "Smokeless Diamond" has been given to it by the manufacturers, Messrs. Curtis and Harvey. This title vividly recalls those good old times when black powder alone served the sportsman's purpose, and "Diamond grain" was, perhaps, the most widely used of all. This new nitro has gone through the ordeal of a series of trials by various experts in shot-gun ballistics remarkably well, shooting up to a high standard of excellence with regard to regularity in the matters of breech-pressures, and shot-velocities and patterns.

It does not of necessity follow that because an explosive gives good results in game guns its shooting in 8-bores and 4-bores is thereby assured. For several years now I have carried out experiments with a view to determine the suitability or otherwise of the several nitro-compounds for the purposes of the wild-fowler.

Those I have so far tried, bulk or concentrated, have on the whole acquitted themselves very creditably. Some of these powders had not previously been fired in duck-guns, and, naturally, at the outset there were difficulties to surmount, chief among these being that bugbear of all gunners, hang-fire, which was unpleasantly rife in guns practically perfect in the matter of their

strikers and chambers. It is not too much to say that nothing would more quickly relegate all big shoulder-guns to the limbo of disuse than the frequent occurrence of hang-fires. Certainly I know of few things more calculated to upset the gunner's equilibrium, literally and figuratively, than the recurrence of such troubles. A miss-fire may, undoubtedly, give the shooter a few moments of trying suspense; but a hang-fire, unless he be superhumanly careful, catches him unawares, knocks him all a-cock, and shatters both nerve and temper completely, if, indeed, nothing worse happens. The bad hang-fires that I had to contend with in some of my early experiments with nitros in 4-bores and 8-bores are certainly to be reckoned amongst the most trying of my gunning experiences. Mishaps of the sort effectually upset the peace of mind of the most hardened gunner, rendering him distrustful; then, with confidence in his weapon or ammunition gone, good-bye to all success in sport. But beyond the mere question of nerve- and mind-trouble engendered by a hang-fire, there is real physical danger, for unless on hearing the snap of the hammer the first natural impulse to lower the gun and tendency to relax the grasp be checked, a heavy blow will be received. I am pleased to record that this hang-fire difficulty has been effectually overcome, the cartridge-case manufacturers having given their attention to the production of suitable forms of ignition for the several nitros in 8-bore and 4-bore cases. Messrs. Kynoch have been especially attentive in this matter of ignition, their thin metallic "Perfect" cases being so largely in request for wild-fowling. This improvement in respect of ignition has resulted in benefit all round, especially in the

direction of eliminating many irregularities of shooting before observable.

The central-fire form of ignition is safer and more certain by far than the earlier pin-fire arrangement, and practically all shot-gun cartridges are now produced on this principle. Our great cartridge-case and gun-cap manufacturers have been given a somewhat hard task to keep pace with the startling developments and the ceaseless introduction of new powders effected during the past ten years or so. Much attention has perforce been given to the alteration and improvement of both cap and cartridge-case, in order that a suitable and regular form of ignition may be provided for the several powders. This has had the happy result of putting sportsmen in the possession of cartridge-cases remarkably exact as to size, and far more reliable with regard to the regularity of action of their ignitive agent. Caps are now generally classed under three heads by the makers: "Ordinary" for black powder; "Medium" for bulk nitros; and "Special" for concentrated nitros.

Numerous varieties of cartridges are now procurable, each with more or less distinctive claim to the attention of the shooter. There are cartridges with all-paper tubes, and cartridges having an outer reinforcement of thin brass extending from the base of their tube to the end of the powder space. In others this brass covering extends the whole length of the paper tube; to this form of case the title of "Ejector" has been given, the smooth polished surface of this case being less liable to stick than is paper, when moisture is about, causing it to be thrown out of the gun the more readily. Lastly, there is the all-metal case, of which the thin solid-drawn brass "Perfect" case of

Messrs. Kynoch is a good example. These thin brass cases have the same cap and anvil as the paper shot-gun cases, and are largely in request by wild-fowlers and others whose sport is followed amidst more or less aqueous surroundings.

An uninteresting subject, truly, is that of wadding to the non-scientific gunner. All the same it is a matter that none can afford to disregard. From earliest times the careful sportsman has given much attention to the form and material of his wadding, knowing so well that thereon much of his success in shooting is dependent. In those old days when newspapers were not one-thousandth part so common as they are now, the daily or the weekly papers were carefully treasured up in the sportsman's establishment in anticipation of the shooting season. Ultra-scientific gunners of the flint-ignition era grew to discern betwixt the various good qualities of the different papers as material for gun-wadding; *The Times* (which, by the way, first made an appearance in 1785, under the title of *Daily Universal Register*) being held in great esteem for the toughness and other good properties of its paper. A carefully-rolled plug of paper, driven down the barrel of the muzzle-loading gun by the heavy ramrod, formed a much better wadding than might be supposed possible. Still, however careful the gunner might be, irregular shooting resulted from such crude methods of loading the shot-gun. Of course, irregularities were most apparent whenever the loading was hurriedly performed; but whatever might be urged in its favour, in point of handiness and so forth, paper formed anything but an ideal wadding. Realizing this fact, gunners began to cast about for some more suitable substance, and on steel

wad punches coming into use, old hats, boots, cork, and an endless variety of other things were requisitioned.

The advent of the breechloading shot-gun gave a marvellous fillip to the evolution of the gun-wad. The process of betterment has at length resulted in the production of wadding that is practically uniform in the matters of gauge, texture, and thickness ; moreover it is produced in a variety of forms eminently suitable for the needs of present-day explosives and gunnery in general. In cartridge-loading as now practised, a thin wad of card or other hard substance is placed next the powder, on this comes a wad of felt, from $\frac{3}{8}$ to $\frac{1}{2}$ an inch thick, and greased with tallow or other lubricant ; resting on this thick felt wad there is a second thin card, the shot-charge being finally covered with a similar card, or, in some cases, a white or grey cloth wad. The felt wads for 4-bores and 8-bores may run up three-quarters of an inch or more in thickness. To the non-observant sportsman a felt wad is just a felt wad and nothing more ; all the same this apparently insignificant item influences considerably, for good or evil, the shooting of a gun. There are several gradations of quality, of hardness, of pliancy and so forth in felt wadding, and strikingly varied results may be obtained with felt wads that to the casual observer differ but slightly from each other in external appearance, the only difference noticed, perhaps, being that of colour. It is not always an easy matter to account for the occasional wild shot that the best of guns now and again display on being tested at the target ; this for the simple reason that exploded cartridges, like dead men, tell no tales. Some of these bad shots may be due to a faulty cap, or a poor turn-

over, but in many instances they as likely as not are caused by defective or badly-placed wadding.

One frequently hears the expression "cheap" cartridge used. I would, however, remark that a cartridge can only be cheap in proportion to its effectiveness. Inferior cartridges that will not bring down game at all fair-shooting distances with a good gun well aimed, may be accounted as so much lumber, dear at any price. Cartridges costing 10s. 6*d.* per 100 may prove in the result—both by way of sport and pleasure in handling the gun—far cheaper than cartridges costing 7s. 6*d.* per 100. For the sake of illustration, we will take two men: A. shooting cartridges costing 10s. 6*d.*, and B. those costing 7s. 6*d.* per 100; each is the other's equal in the matter of gunning ability, and each shooter expends the same number of cartridges, 100, in the course of a day's sport. At the end of the day A. has a bag of 75 head, whilst B. can show but 60 head of game. Assuming that these two sportsmen went out for the pure love of sport, need we ask which would derive the most satisfactory return for his outlay? If, on the other hand, we put them down as the veriest pot-hunters who ever handled fire-arms, it will readily be imagined which of the twain would rejoice the more greatly over the tangible results of his day's shooting.

Now and again a complaint may be heard in the shooting-field to the effect that a cartridge has merely "fizzled," and that the shot has scarcely been propelled out of the gun-barrel. Whenever it is possible to have such complaints thoroughly investigated, it is generally found that the cartridge loader, and not the powder manufacturer, is at fault. It will be apparent that if a few grains only of powder are put into a case, that

cartridge may only fizzle, whilst the shot will possibly be propelled some little way up the barrel, and so cause serious damage to both gun and user should another cartridge be inserted and fired. This mischief having occurred on several occasions gives point to the necessity for guarding against obstructions by glancing through the gun-barrels before inserting fresh cartridges. If by chance no powder at all is put in the cartridge, it is unlikely that any ordinary cap will be equal to the task of moving the shot.

All the foregoing, gun and cartridge-case, powder and wadding, are of no avail without a missile in some form or other. Lead shot for sporting purposes is formed by two distinct processes—dropping or moulding. The smaller sizes, those most frequently in use, are made by pouring melted lead through a colander having perforations, or from a trough having a notched edge, corresponding to the size of the shot to be made. The liquid metal, falling from a considerable height, forms itself into globules which solidify on their downward passage through the air, the cooling process being completed by their reception in water-tanks. To insure sphericity in the larger pellets of drop-shot, it is necessary that the lead should be poured from a great height, for unless sufficiently cooled on reaching the end of their downward journey, their due roundness will not be insured. Lead shot, dropped or moulded, to be truly serviceable, must be perfectly round, smooth of surface, and uniform in size. With shot imperfect in form, or of mixed sizes, irregularities in shooting will result. Shot is now made of two distinct kinds, the original or “soft” form, made practically of unhardened lead; and the “chilled” or hardened shot.

As it may be of service to many sportsmen, especially to those who may desire accuracy in the matter of ascertaining the shooting of their guns at the target, I will give tables showing the number of pellets contained in an ounce of shot of the various sizes as lettered or numbered by English shot-makers:—

WALKERS, PARKER AND CO., LONDON.

MOULD SHOT.

Size.	Pellets per Ounce.	Size.	Pellets per Ounce.
L G	5½	S S G	15
M G	8½ to 9	S S S G	17
S G	11		
DROP SHOT.			
A A	40	5	218
A	50	6	270
B B	58	7	341
B	75	8	600
1	82	9	984
2	112	10	1726
3	135	Dust	Variable
4	177		

COX BROTHERS AND CO., DERBY.

MOULD SHOT.

Size.	Pellets per Ounce.	Size.	Pellets per Ounce.
L G	5 $\frac{1}{2}$	L M	14
M G	8 $\frac{1}{2}$	S M	17
S G	11	2/A	27
PATENT SHOT.			
2/S	48	5 $\frac{1}{2}$	240
S	57	6	270
2/B	77	6 $\frac{1}{2}$	300
B	89	7	340
1	104	8	450
2	122	9	580
3	140	10	850
4	172	20	1040
5	218	Dust	1760

NEWCASTLE CHILLED SHOT CO.

Size.	Pellets per Ounce.	Size.	Pellets per Ounce.
S G	8	4	172
S S G	11	5	218
S S S G	14	6	270
A A A	40	6 *	300
A A	48	7	340
A	56	8	450
B B B B	56	9	580
B B B	64	10	850
B B	76	11	1040
B	88	12	1250
1	104	Large Dust	1700
2	122	Small Dust	2800 to 3000
3	140		

* Northern size, to which the number 6 $\frac{1}{2}$ is better applied as preventing confusion; the larger of the two sixes, counting 270 pellets to the ounce, is the standard size for testing game guns.

It will be gathered from the foregoing tables that in several instances there are considerable variations in the number of pellets per ounce of shot as sized by the different makers. This is an important consideration when shooting guns at the target, for the mere mention of name or size of the shot used will afford no true indication of the value of the work accomplished unless the number of pellets per ounce is also given. The difference of only half-a-dozen pellets per ounce in shot of the larger sizes materially affects the verdict on the result of any target experiments. It might be excusable to overlook a difference of half-a-dozen pellets with sizes such as No. 6, or smaller, but variations in the number of pellets contained in charges of the larger sizes cannot under any circumstances be overlooked if really reliable comparisons are desired. It should also be borne in mind that successive batches of shot from the same maker are liable to vary to the extent of a few pellets per ounce. In those sections of the book treating of game and wild-fowl shooting, specific advice will be offered respecting the sizes of shot best adapted for the ready despatch of the quarry in each branch of sport.

Much has been written at one time or another respecting the varying velocity of the pellets during the flight of charges of small shot. I am of the opinion that the falling off of speed of the laggard pellets is in great measure attributable to their disfiguration. This may not account for the whole of the stringing which takes place, for there must always be some tailing off where the pellets vary in weight, but it may, I think, be assumed that a battered shapeless lump of lead will not fly so far, neither will it preserve

so true a course, as a spherical pellet. A few shots fired at the card-rack used for testing the penetrative force of shot will convince that the penetration exhibited is proportionate to the rotundity of the shot. In the course of some experiments with wild-fowl guns, the results of which were recorded in *The Field* some eight years ago, I found this fact fully emphasized, it being clearly noticeable that some disfigured pellets did not get through half the number of sheets pierced by more perfect missiles. Target experiments with wild-fowl guns serve at least one good purpose. In comparison with the smaller arms the results obtained from the shooting of heavy guns and charges are much magnified, and therefore, facts are forced on notice that might possibly escape attention had they been conducted on a smaller scale. Thus it is with the crushing of shot-pellets. I have never seen this crushing of the pellets so clearly marked as it was on the occasion of trying a 4-bore, a report of which I sent to *The Field* of March 26, 1898. The circumstances which led to so good an exhibition of the relative value of crushed and uncrushed pellets were brought about by a difficulty experienced in procuring a particular size of shot. This slight hitch in my arrangements caused me to be shooting with two different sizes and forms of shot, viz. soft shot of the larger size of No. 1, and hard shot of the particular brand known as chilled of the smaller size of No. 1. In the course of that trial it was found on taking the pellets out of the card-rack that a large percentage of the soft shot had been completely knocked out of shape within the gun-barrel, whereas the form of the chilled pellets had been much better preserved. The

effect of this crushing was at once ocularly and unmistakably demonstrated, for the malformed shot, whilst much weightier individually than the hard pellets, fell considerably behind the latter in the matter of penetration.

On my first drawing attention to this fact in gunnery, the opinion was expressed that this alteration in form of the pellets was caused by the force of impact on striking an object. This, of course, was a perfectly natural first impression, and I have no doubt whatever that in some instances the casual observer, on finding evidence of these battered pellets, has attributed the malformation to this cause entirely, and thus has not cared to pursue the inquiry further. The disfigurement I now speak of is not that caused by striking an object; it certainly is attributable to a totally different cause. It may, in fact, be brought about within the gun in three different ways. First, by the violent impact of the powder explosion. Second, by compression in passing through the cone at the end of chamber or choke at end of barrel. Third, by friction against the side of the barrel. These, I take it, are the chief causes of injury, and, following in the same sequence, I will give the effects produced by them upon the pellets. First, the production of several facets, or indentations, on the inner pellets of the charge, these injuries corresponding to the points of contact with the surrounding pellets. Second, the effects produced by the second of the causes named are similar to the foregoing, *i.e.* a series of facets or indentations. Third, a flat side left on the outer pellets of the charge. A little practice enables one to determine on examining a deformed pellet as to which cause its injury may be assigned. The compression of the lead caused by pressure leaves

more or less a dull and unpolished surface, whereas the flat side, or face, produced by friction is usually fairly smooth and bright. Moreover, in the latter case and in the worst instances, from a quarter to a third of the pellet may have been thus worn away.

It must be patent to most people that excessive disfiguration of the pellets within the gun-barrel, from whatever cause arising, must militate greatly against the effectiveness and range of the charge. It will do this in two or three different ways. First, by retardation of flight, the malformed pellets encountering greater atmospheric resistance. The smallest school-boy of all is perfectly alive to the fact that a smooth round stone takes a straighter course through the air and travels further than an irregularly-shaped stone with jagged and uneven edges. In the second place, deformed pellets are liable to fly off at a tangent, and herein may lurk a positive source of danger. Most people with a lengthy experience of guns and shooting have come across curious instances where game or, it may be, dogs or men, standing well out of the line of aim, have been struck by a stray pellet. One such incident occurred in my own shooting not many years ago. I was shooting driven partridges, and on firing my first barrel at one of three or four birds coming up, and from 30 to 35 yards distant, I was much surprised to see a bird come down several feet away from, and on the extreme left of, the object of my aim. On picking it up, it was found to have been shot through the head by a single pellet, and was laid exactly 15 feet on one side of the bird aimed at, which also was killed outright.

This question of directness of flight has now and

again proved a fruitful source of argument with sportsmen. Some, I believe, hold to the opinion that the pellets jostle one another on being released from the muzzle of the gun, and this causes one or more occasionally to cannon off at an angle. This assumption sounds so very pretty in theory that I am not inclined to question it. I will, however, suggest that the flattened edge of a misshapen pellet may now and again cause such battered missile to diverge at a sharp angle from its proper course.



AN OLD POACHER.

CHAPTER V

DOGS

THAT paragon of excellence, the perfect "shooting dog," so frequently discussed in the smoking-room or mentioned in print, is not so often to be met with, even in these days of the field-trial and the show-bench. As far as I have been able to discover, the average individual appears to fix up a convenient, and not too rigid, standard of his, or her, own as to what constitutes a good dog both in the field and out of it. The fact is, we are all a little blind to the faults and foibles of our canine favourites, and at the same time rather prone to exalt overmuch their good properties. So long as they are not ill-looking, and give sufficient evidence of a true spirit of camaraderie and attentiveness, we are generally disposed to condone many of their sins of omission and commission in the shooting-field.

Methods of shooting have changed extensively within the past twenty or more years, and this has had the effect of greatly modifying opinion with regard to the employment of dogs. For example, take partridge-shooting. In former years it was generally customary for sportsmen to take Pointers or Setters, and with them to range every available acre of ground—grass, clover-seeds, stubble, fallow, turnips or potatoes, all being served

more or less alike. Of course the old hands, knowing to a nicety the habits of their quarry, were inclined to pick out the best holding patches of game-shelter according to weather or the time of day. All the same, if the ground was to be properly shot over, every available inch was at that period beaten more or less scrupulously. This old-time plan is still followed by several sportsmen, particularly in those districts where other methods of procedure cannot so well be practised.

With the more general adoption of the breech-loader came a change of tactics. Shooting men on finding that they could discharge and reload their guns with far greater ease and celerity, arrived at the conclusion that so much stubble-ranging was slow work. Thereupon means were devised for a general briskening up of sport, with the result that pasture and stubble and ground of that nature were, either partly or wholly, left to be ranged by keepers and beaters, the game lodged thereon being driven into better holding covert, such as turnips or mangolds, rape and mustard, potatoes and big clover aftermath. Thus the system known as "walking up," as apart from shooting over dogs, came to be instituted; the gunners walking in line flushing their own game in the root-crops and other good shelter, the only dogs taken being Retrievers for the purpose of picking up the dead or wounded game.

Another and greater change in the method of shooting has done still more in the direction of banishing Pointer and Setter from the shooting-field than even the last-mentioned plan of walking the game up. I refer to the system known as driving. By this plan the game on partridge-manor or grouse-moor is driven by an extended line of beaters over a corresponding line of guns posted

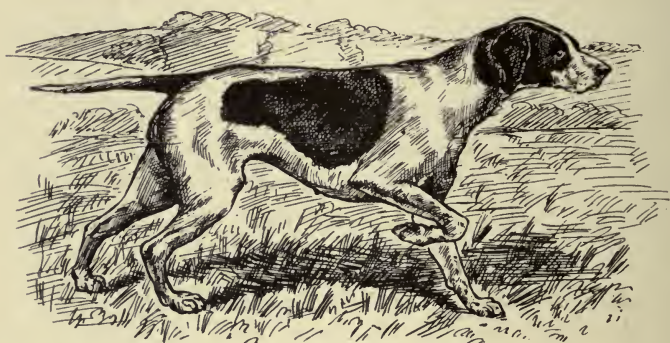
out of sight behind butts, stone wall, hedgerow or screen of some sort. Here, naturally, the only useful office of a dog is to pick up dead or wounded game, so that in this particular form of sport Pointers and Setters are less than ever before required.

Wherever dogs are used for finding game and considerable tracts of ground have to be covered in pursuit of grouse, partridge, or snipe, either Pointer or Setter is likely to prove of greatest service to a party of gunners. For use on the grouse-moors the Setter is in some respects to be preferred to the Pointer. Setters frequently display greater activity and endurance than do Pointers, especially on the rougher, wetter ground of some western and northern moors, and so enable sportsmen to cover a fair stretch of ground in a day and with fewer relays of dogs. Another cause for the preference displayed for the Setter for the purpose of grouse-shooting, arises from the fact that the Pointer is sooner incapacitated when traversing rough heather. Unless quite exceptional care has been taken to insure a due hardening of their feet by exercise prior to the shooting season, Pointers soon become footsore when ranging over the coarse dry stalks of the old heather, their feet not having so much protecting hair upon them as have those of the Setter. On the other hand, in the hottest weather and on the driest moors, Pointers that are thoroughly fit and hardened by previous exercise, may frequently outstay the Setter, from the fact of the latter being the heavier coated, and so feeling the heat and the need for water more than do the Pointers.

The Pointers of these times are considerably altered in form and character from the Pointers of three or four generations ago. George Stubbs, who may be regarded

as the pioneer in England of animal painting on a more correct anatomical basis, clearly shows us what the Pointer was like more than a century ago. To mark the differences in build and muscular development of the earlier and later breeds of Pointer, I here reproduce a sketch after Stubbs of the Spanish Pointer, the dog in use in his day. For purposes of comparison the Pointer now in use is also represented.

There are now three tolerably distinct forms of the Setter :—



POINTER (MODERN STYLE).

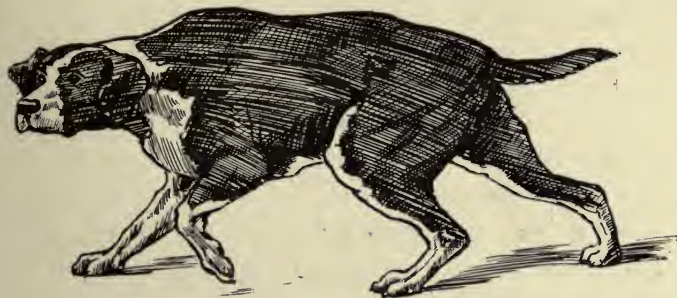
1. The English Setter of extremely variable colour ; this breed being, as a rule, more or less white with orange, lemon, liver-coloured, or black markings, spots, or tickings.

2. The Black and Tan, Scottish, or, as more commonly styled, Gordon Setter. This breed was originally produced at Gordon Castle ; and to this fact it owes its name. In this dog the predominant colours are black, with tan or rich red-brown ; some show white here and there, but this feature is generally considered undesirable.

3. The Irish Setter, in which the prevailing tone of

colour is blood-red, golden-chestnut, or mahogany ; black should be absent ; white, however, is often found upon the head, chest, neck or feet of the Irish Setter. In recent years it would appear to have been the object of many breeders of this class of sporting dog to eliminate white, and, as far as possible, to produce dogs that are wholly red. These three breeds of the Setter differ in form, build, and nature of coat almost as much as in colouring.

Few people, having had experience of the Setter, will



POINTER (AFTER GEORGE STUBBS).

deny that this dog, like his near relative the Spaniel, is entitled to be placed in the first rank for intelligence, amiability, and willingness. Some Setters and Pointers are trained to retrieve dead game, and this practice may prove especially helpful to the one-dog man. Such dogs however require to be thoroughly broken in, and to be severely disciplined, or they may develop habits of unsteadiness, and perhaps also a pottering style.

In my youthful shooting days I had a great idea for procuring a dog that would carry out the two functions of finding the living and of retrieving the dead game. A Pointer that I had for one short season was obtained

on the strength of an assurance that he would "retrieve handsomely," and was, in fact, "a good all-round dog." I had not had him long before discovering that the two processes of finding and retrieving did not work together so harmoniously in his case, he having a strong inclination for running in to retrieve his game the moment the shot was fired. For bull-dog determination to go through with his work regardless of consequences, I never saw his equal, and I stood him for a time as he invariably went about with such an air of "*we* can do it, you know," and was withal so companionable and thoroughly industrious and untiring in his quest for game. One fine day, however, he developed a tendency for "seating" hares, then proudly trotting up with his contribution to the bag, much to my embarrassment and my friends' delectation. Then I arrived at the conclusion that Master "Don" was neither more nor less than a Satanic instrument designed solely for the purpose of giving rise to unnecessary and foolish remarks, and we shortly thereafter parted.

The Retriever must be looked upon as a more or less recent production ; modern, in fact, as compared with the Setter. Whilst it might be incorrect to say that the Retriever is a development due to modern methods of sport, it certainly is correct that this breed of sporting dog has become exceedingly popular largely by reason of altered conditions in the shooting-field. The systems of walking up, and driving of partridges and other game have given rise to a great demand for the Retriever, and it is safe to say that this class of dog must become even still more widely popular.

The Retriever proper, as now known, is a curious admixture of breeds—comprising "Labrador," New-

foundland, Setter, Water-spaniel, and Sheep-dog—forming a most striking combination of excellences attained by a judicious blending of certain desirable properties of one breed with another. Retrievers all black in colour



RETRIEVER AND PHEASANT.

and having either a curly or a flat and wavy coat are usually considered the most desirable animals, so far as appearances go. The curly-coated dog probably gives the greater evidence of the Water-spaniel and Newfoundland in his composition, whilst in both coat and

form the flat-coated Retriever possibly shows more of the Setter. There are, of course, Retrievers of a variety of other colours, brown or liver-coloured, black and white or tan, and so forth, and many of these are quite as excellent for service in the field as the more typical dogs first mentioned.

Under the comprehensive title of Retriever may be mentioned dogs of several different breeds, distinctly wide of character, that may be taught to retrieve really well. Terriers — Airedales and others — Sheep-dogs, Poodles, and, not to put too fine a point on it, dogs of mixed breed, may now and again be found bringing fowl to hand from land or water with all the dash and tenderness of a perfectly-trained Retriever. As a matter of fact it can scarcely be said of any particular breed that it may be relied upon to furnish the best all-round dog for the varied requirements of the wild-fowler. As well might one say that a 4- an 8- or a 12-bore gun is to be relied upon equally for every kind of sport with geese, ducks, or other wild-fowl. Instances are not wanting in which it is shown that a greater combination of useful qualities has been obtained from judicious crosses formed by Spaniel, Retriever, Poodle, Terrier, and the like, than it is often possible to find in any one of those breeds, however perfectly and truly they may be bred and trained.

One of the best dogs that I ever had for certain purposes of wild-fowling was an Airedale Terrier. He was remarkably bright and intelligent, would retrieve anything from anywhere, was courageous as a lion, and for hunting close-lying game or fowl out of reed, rush, gorse, or briar he had few equals. His services, unfortunately, were after a time frequently requisitioned for the killing of rats and other vermin, and this caused

him to acquire the bad habit of worrying his game if not at all times strictly watched. Prior to this, multiplication of duties, this dog had never given evidence of the possession of a hard mouth.

The Poodle is endowed with a high order of sagacity and, when properly trained, is most obedient, being readily taught to perform many difficult and clever tricks. I have always held the opinion that, if found with sufficient stamina to withstand cold, wet, and hard work, the Poodle, either the large or the small breed, might



“DISS.”

prove an invaluable ally for the gunner who pursues his solitary way along shore or through bog or brake.

One Poodle that I possessed would, I am convinced, have made a most useful adjunct in the shooting-field had but his gunning education commenced sufficiently early in life. This Poodle had several excellent properties, and he also had others that by the sportsman could only be termed bad or indifferent. Had he however been taken in hand soon enough, and his education thoroughly persevered with, I am certain that his faults would not have proved ineradicable. Furred or feathered,

the most obstinate skulker in thick covert had perforce to leave its hiding-place once "Diss" got fairly on its track. For flushing close-lying woodcock or pheasant, or in turning partridge or rabbit out of thick hedgerows he had few equals. The accompanying sketch is a good portrait of my old favourite "Diss" coming out of the water.

Spaniels have long been held in high esteem. As an accompaniment to small parties of guns, or for the general purposes of the solitary sportsman, they are, perhaps, the most generally serviceable of all shooting dogs. They range close at hand, and the shooter in pursuit of pheasant, woodcock, blackcock, or rabbit in densest covert, on bracken and rush-covered ground, or amidst furze and briar and bramble-grown wastes and hedgerows, will have his game readily found and flushed by these hard-working and willing animals.

There are several distinct varieties of the Spaniel. Amongst the most prominent of these may be mentioned the Clumber, Sussex, Norfolk, Black field, Cocker, the English Water- and the Irish Water-spaniel. These breeds show considerable differences one from another in the matters of form, size, coat, and colour. Some are wholly black, red, or liver-coloured; others white with various-coloured markings. Varied in appearance as are these several classes of Spaniel, they are almost as strikingly diverse in disposition and general qualifications. Under these circumstances it is not surprising that all are not equally adapted for every department of field work. Some are especially valuable as aids when shooting in close covert, others are better employed in open field work, whilst, as their name implies, the Water-spaniels prove of particular assistance to the wild-fowler.



Herbert Sharp
1903

WELL STOPPED.

land shooting where thick reed-beds abound these dogs are in their true element. A really well-broken, good-tempered dog of this breed forms a most perfect retriever, facing icy-cold water again and again ; in duck-flighting sitting quietly at one's feet with icicles hanging from his shaggy coat without murmur or look of discontent.

The subject of sporting dogs requires special treatment, and far more space than I can devote to it in the present work. It has already, however, an extensive literature of its own, many writers with far more technical knowledge of the subject than I lay claim to having made this especial theme their own.



SECTION II

THE SPORTSMAN'S QUARRY

CHAPTER VI—THE GAME-BIRDS

Great Bustard—Capercaillie—Black Grouse—Red Grouse—Ptarmigan.

THE GREAT BUSTARD. (*Otis tarda.*)

THIS bird formerly occupied a far more important position on the British game-list than, unfortunately, it can be said to do at the present time. In the process of civilizing this Britain of ours, many benefits have been conferred upon the community. Still, one cannot but regret that this should have necessitated the sweeping away of certain aboriginal animals, some amongst which were of first importance to the sportsman. The Great Bustard is a case in point, the last of the native race having long ago disappeared before the steady advance of the plough and other implements of the farmer.

The male bustard is a handsome bird of truly magnificent proportions. Fully adult male bustards have frequently been shot weighing 30 lb. and more, with a total length measurement of 45 to 48 inches, and a wing-stretch, in some cases, of eight feet from tip to tip.

The female is considerably smaller, measuring at full length some 36 inches. The eggs, numbering two or three, are laid in a slight hollow scratched in the ground; they measure three inches in length by a little over two inches in breadth, the coloration being indistinct



THE GREAT BUSTARD.

irregular patches of greenish-brown on an olive-brown ground.

A practical attempt is now being made towards re-instating the bustard as a resident game-bird in Great Britain. In 1901 seventeen birds were secured from Spain, and turned down upon Lord Iveagh's estate in Suffolk. This public-spirited effort has proved anything but successful so far, largely by reason of the insensate

folly (to put it as mildly as possible) of individuals who have slaughtered these noble game-birds whenever opportunity occurred. In July of the year mentioned a gamekeeper—who, surely, of all people, should have been the last to have committed such act—was convicted at Eye, Suffolk, for shooting two bustards during the previous month, and was fined the full penalty for the offence. These birds were two from those imported by Lord Iveagh for breeding purposes, they having strayed away on to a neighbouring estate. Later accounts to hand respecting these interesting strangers state that their numbers have been reduced to four, two males and two females. Thus, even yet, there remains some slight hope that this costly experiment towards the reinstatement of the bustard may meet with a measure of the success it so greatly merits.

During the Georgian period the bustard roamed at large over certain wild tracts in England, notably on those elevated districts the Yorkshire Wolds, the downs of Wiltshire, Dorsetshire, and of other southern counties. Parts of the counties of Norfolk and Suffolk were also then recognized as favourite haunts of the bustard. Throughout the country, the commencement of the Victorian era marked the total extinguishment of this native race of bustards.

For the sportsman, as for the naturalist, melancholy interest attaches to the fact that bustards were formerly tolerably plentiful in England, and also to some extent in Scotland. According to Hector Boethius, these birds were resident upon the flat land between the Lammermuirs and the Tweed in the year 1526. The bustard's proneness to forsake its eggs had attracted attention in those times, Boethius remarking in the quaint language

of the period :—"Such also is their qualitie, that if they perceive their egges to have bene touched in theyr absence by man's hand (which lie commonly on the bare earth), they forsake those nestes and lay in other places."

As far back as 1534 it was found advisable to afford the bustard some protection, and by the passing of an "Act for the Protection of Wild Fowle" (25th Henry VIII.), the taking of the eggs of this bird was prohibited, the maximum penalty attached to the misdemeanor being 20*d.* for each egg. But, of course, it is one thing to pass Acts of the sort and quite another thing to enforce them. Had it been possible to have compelled thorough obedience to the provisions of this early protective measure, sportsmen of to-day might not now be regretting the passing of the bustard. This Act of Henry VIII., if not at first a dead letter, probably soon afterwards came to be little recognized, later records stating that bustards' eggs were regularly gathered and hatched out under hens. Towards the end of the eighteenth century these eggs certainly had a high marketable value, they being readily saleable at half-a-guinea each. This is easily understood when we learn that the young birds, long before arriving at full growth, were disposed of for as much as ten guineas and, in some instances, twelve guineas per pair.

A gross error committed by a naturalist of the Tudor period may also in some degree have contributed to hasten the extinction of the British bustards by affording licence or valid excuse for their destruction. The writer referred to, Dr. Thomas Muffet, solemnly states that :—"Bistards or bustards (so called for their slow pace and heavy flying), or, as the Scots term them, gusestards, that is slow geese, feed upon flesh, livers,

and young lambs." A more damaging libel could not well have been uttered, nor one better calculated to raise man's hand against the bird. Although the bustard may occasionally bolt mice or other small animals, as, indeed, will farmyard turkeys and ducks, to say that they will subsist upon flesh and young lambs is singularly untrue. This remark may have caused the death of many bustards just at the most critical period of their nesting, it affording some excuse for those who on seeing these huge birds in the vicinity of their flocks would set to work to shoot, trap, or run them down with sheep-dogs. The error doubtless arose through this writer having mixed up the names bustard and buzzard—the latter being, as is now at all events tolerably well known, a bird of prey, and no doubt it was the bird reported to the worthy doctor as feeding upon lambs.

But other causes, far more powerful and irresistible than the foregoing, have contributed to the banishment of the bustard. The most important factor operating towards this end was, in all probability, the inclosure and cultivation of the land so extensively undertaken at the close of the eighteenth century. At that time large tracts of country were divided and laid out in small fields; thousands of acres of primeval waste, common, or pasture-land—the wild home of the bustard and stone-curlew—being then put under the plough. Political events were entirely responsible for this hasty transformation of the face of the country. Europe was then in arms, and the price of wheat rising to nearly £5 per quarter (six guineas per quarter was obtained for wheat some few years later) caused farmers to plough up every available inch of pasture or waste

land in order to increase their wheat-growing capacity to the utmost possible limit. This wheat-growing fever lasted without intermission until the tension came to be finally relieved by the historic conflict on the field of Waterloo. But the damage, so far as the rooting out of the bustard was concerned, had then been well nigh completed, the exigencies of the agriculturist having caused the dispersion or destruction of practically the whole of the native race of British bustards.

By traversing one or two of the natural history records of the period, it will be observed that this process of extirpation was chiefly consummated during the last quarter of the eighteenth century. In 1777 Pennant stated that bustards inhabited the open parts of the south and east of England. The fact of Pennant's writings being contemporaneous with the establishment of the Bath and West of England Agricultural Society, of the Highland Society in 1784, and of the National Board of Agriculture in 1793, goes to show that the subsequent decadence of the native race of bustards proceeded step by step with the cultivation of greater areas of arable land, and the evolution generally of modern principles of agriculture. Some twenty-five years later than the first-mentioned date Montagu, a well-known naturalist, writing early in the nineteenth century, reported the bustards to be then "found only upon the large extensive plains, and are almost extinct, except upon those of Wiltshire, where they are become very scarce within these few years."

This melancholy tale relative to the disappearance of our aboriginal bustards is now all but completed. The last bustard's nest was found upon the Yorkshire Wolds in 1825, and in the following year the sole survivor of

the native race in that part of the country was killed. In the adjoining county of Lincoln bustards became extinct somewhere about that time. In Wiltshire the end is said to have arrived some few years earlier. In East Anglia, however, bustards managed to survive still a few years later, the last-known examples, two females, being shot there in 1838.

Since those dates, at intervals of a few years, bustards have been reported as occurring in various parts of this country. These, of course, are merely visitors that have come over from the Continent, quite possibly from Spain, in which country the great bustard is still fairly abundant.

THE GROUSE FAMILY

THERE are in these islands four distinct species of the grouse family. These are (1) The Wood-Grouse or Capercaillie, (2) The Black Grouse, (3) The Red Grouse, (4) The Ptarmigan. Each individual member of this interesting group of game-birds may readily be distinguished from the rest by reason of its habits no less than by its general appearance. For example, the Capercaillie and the Blackcock are more or less woodland birds, the favourite haunt of the former being the dense pine-woods, the latter preferring the younger plantations and the scrub bordering on the moors and cultivated ground. Both species are polygamous. The Red Grouse and the Ptarmigan, on the contrary, habitually frequent the open country, the former being, as is well known, a denizen of the moorlands; whilst winter and summer, the latter resides upon the hill-tops

at altitudes ranging from 1500 ft. to 4000 ft. Both Red Grouse and Ptarmigan are strictly monogamous.

THE CAPERCAILLIE. (*Tetrao urogallus*.)

Our native race of capercaillies, like that of the bustard just described, was totally extinguished many years ago. It sounds strange in these days to be told



CAPERCAILLIE.

that the firing of large tracts of pine-forests, in order to get rid of the hordes of ravenous wolves infesting North Britain, was in great part accountable for the extinction of the original stock of capercaillies. This desperate remedy of fire would doubtless hasten their extermination, for although some birds might escape the flames, their means of subsistence would thereby with certainty be swept wholly away.

It is, however, with the restoration of the capercaillie, now, happily, most successfully accomplished, that the sportsman is most interested. For well-nigh a century

Scotland was without this noble game-bird. The first movement towards its revival, of anything like adequate proportions, was that instituted by the late Sir Thomas Fowell Buxton, who in 1836 wrote to Mr. L. Lloyd, a well-known sportsman and naturalist resident in Sweden, requesting him to procure a sufficient number of birds for turning down upon the estate of Lord Breadalbane at Taymouth Castle. Sir Fowell Buxton went so far as to send out to Sweden his head-keeper, and Mr. Lloyd having set about the accomplishment of his onerous commission with commendable zeal, some forty-eight capercaillie were at length safely transported from Sweden to Scotland. Five years later, October 11, 1841, Lord Breadalbane wrote to Mr. Lloyd to tell him that the capers had thriven most excellently, so that by that time there were a goodly number of these birds on his estate in Perthshire. Twenty years later Lord Breadalbane modestly computed the offspring of these imported birds at fully one thousand. About that period, or soon afterwards, his Lordship's head-keeper, in a letter to a friend, estimated them at double that number. To-day capercaillies are a welcome and most attractive feature on many of the great sporting estates of Perthshire and the adjacent counties, in which quarter these noble birds are now both numerous and, to all appearance, thoroughly re-established. Thus the names of Buxton, Lloyd, and Breadalbane deserve to be remembered for all time by Scottish sportsmen.

In its natural habitat, the birch and pine-forests of our hilly northern counties, the capercaillie subsists, in great measure, upon the buds and tender shoots of larch and pine, varied with a diet of berries and fruits, of grubs and insects, in their season. Although inhabiting

the wilder and least-cultivated districts, capercaillies still have a taste for grain, and so sportsmen will frequently find them visiting the cornfields far removed from their roosting quarters. .

The male capercaillie is, if we except the bustard, the largest of British game-fowl. Fully adult birds measure three feet in length, their weight sometimes exceeding 10 lb.; in fact, birds weighing as much as 14 lb. have occasionally been killed. The hen capercaillie is not nearly so large a bird, her weight being about half that of the male; nor is her appearance so striking, for her plumage, a quietly-toned and unassuming brown, lacks the handsome metallic green lustre of her darker-plumaged mate. In Scotland the hen capercaillie nests during the latter half of May; the eggs vary in number from six to a dozen or more, and incubation lasts about a month.

THE BLACK GROUSE. (*Tetrao tetrix*.)

The black grouse is not so peculiarly and entirely a British possession as is its congener the red grouse. Continental sportsmen are justly proud to have so fine a game-bird as the blackcock, which by French chasseurs is styled, "Coq de bruyère à queue forchu"—fork-tailed heathcock; in Germany it bears the equally expressive, though scarcely less formidable title, "Gabel schwanziges waldhuhn"—fork-tailed woodfowl. Either term, by the way, must prove a somewhat awkward mouthful for the anxious gamekeeper, in a hurry to inform his ambushed line of guns that blackcock are coming over.

Formerly, black grouse existed in various districts suitable to their requirements throughout England and

Wales. From many of these they have now entirely disappeared. In Ireland, where repeated efforts have been made to effect their establishment, black game, for all principal sporting purposes, are non-existent. Scotland is now the true home of black grouse in Great Britain. But even in this their principal stronghold these birds were some few years ago reported as decreasing in numbers. The causes assigned as being contributory to this decrease were a succession of abnormally wet hatching seasons, the method of draining land by means of open surface drains—the drains causing the death of many chicks—and the loss caused by rooks and carrion-crows in the way of egg-stealing and the killing of newly-hatched young. Happily this decadence of the species in Scotland now seems to have been in some degree arrested, at all events temporarily, by the return to more favourable climatic conditions, better reports of the shooting having come to hand recently.

Within recent years several attempts have been made towards the inclusion of black game in the list of Irish sporting birds. Efforts to introduce these birds into Antrim and also into Sligo have proved unsuccessful, notwithstanding the fact that ground suited to their requirements was selected. In this connection it is interesting to observe that no evidence has as yet been forthcoming to show that black game ever were indigenous in Ireland. Still, herein is probably not the true reason for this want of success, for on the extensive heathy tracts along part of the north-west border of Norfolk, where it was considered that at one time black game were truly indigenous, similar attempts towards the introduction of the species have proved equally futile.

In England black grouse are thriving best at present in the hilly counties of Northumberland, Westmoreland, and Cumberland. On some of the high lands of the south-western counties, particularly on Exmoor and the Somersetshire hills, good bags of black grouse were secured some few years ago. Of late, however, the shooting has fallen off considerably in that quarter. In



BLACKCOCK RISING.

Scotland at the present time the best black-game shooting is obtainable in certain districts in the counties of Perth, Aberdeen, Inverness, Roxburgh, and Dumfries.

Of this species of grouse it is the handsome male which attracts most attention; truly the blackcock, with glossy blue-black plumage, scarlet eye-patches, pure white underparts, and gracefully curved tail-feathers, is a most striking object. The female is so differently clad

in her plumage of brown, spotted and barred though it be with darker shades, that she has scant claim to the title "black" grouse, and, in fact, is generally termed "greyhen."

Black game nest somewhat earlier than do capercaillie, the eggs, eight or ten in number, being usually laid by about the middle of May. The food of these birds is of a very mixed character, ranging, according to season, from the buds and tender shoots of birch, willow, alder, fir, and heather to various seeds and to fruits, such as blaeberry, whortleberry, and cranberry. They also display a great liking for grain, and numbers of black grouse may generally be seen upon the corn-stooks and in the stubbles during autumn in several counties of North Britain. The weight of an old blackcock in good condition is about 4 lb., and his length 22 inches; greyhens turn the scale at from 2 lb. to 2½ lb., and measure about 17 or 18 inches from top to toe.

THE RED GROUSE. (*Lagopus scoticus*.)

This bird, undoubtedly, is one of the most valuable natural assets found upon the land throughout the whole of Northern Britain. Thousands of these birds are killed each season, and it is entirely on their account that hundreds of thousands of pounds sterling change hands every year. It has been computed that for Scottish shootings alone no less a sum than £400,000 per annum is paid. If to this be added the rentals paid for grouse moors in Yorkshire, Westmoreland, Cumberland, Derbyshire, and other English counties, in Wales also, and in Ireland, it will be realized that the red grouse is an important factor in insuring the circulation of money.

The red grouse rises also in the estimation of British sportsmen when it is considered that this fine game-bird is indigenous only in these islands. Various attempts have been made to introduce red grouse into North Germany and elsewhere on the Continent, but so far the effort has not met with any decided measure of success. The red grouse is an early nester, and this circumstance accounts for still another reason for holding the bird in high esteem. Hatching out quite early and maturing rapidly, the hardy young grouse are usually found to be in a shootable condition fully a fortnight to three weeks before partridges are ready for the gun. Thus we find the law of the land sanctions the shooting of grouse so early as August 12, consequently this date deservedly occupies an exceedingly prominent position in the calendar of a large section of the shooting fraternity of this country.

In recent years that dread disorder known commonly as "grouse disease" has seldom been absent from our northern moors for long together. A period of comparative immunity from this scourge has, however, lately been enjoyed, and the most fervent wish of all keen sportsmen is that it may long continue. The character of the weather experienced throughout winter greatly influences the position, and decides in great measure the all-important problem as to the existence of disease during the ensuing spring and summer. Mild winters tend to foster the disease, whilst, on the other hand, severe winters tend towards its discouragement. Hard frost and deep snow, in their proper season, are often enough true benefactors upon a grouse moor, for, in addition to keeping disease in check, such wintry accompaniments help in other ways to promote a healthy stock of breed-

ing grouse. Severe weather on the uplands assists to this end by clearing off old and weakly grouse—some of the latter in all probability being birds that have been maimed by the shot during the previous season's shooting. Naturally, such birds are most susceptible to the inroads of disease, fostering and keeping it going in situations where, upon a stock composed entirely of strong young birds, it might not otherwise become epidemic in character.

But frost and snow exercise not merely a beneficent influence in weeding out the weakly and aged grouse. It is the habit of red grouse to migrate from the more elevated and exposed moorlands during the prevalence of deep snow to other quarters where suitable food is readily obtainable. By this means the evils of inbreeding are to a large extent avoided, and in the most natural manner possible is procured that interchange of blood which, equally with good food, is essential to the well-being of all stocks of game-birds.

Beyond the acquaintanceship formed through seeing grouse hanging in the game-dealers' shops, or as served upon their dining-tables, many south-country sportsmen have few opportunities for gaining information at first hand respecting the birds of our moorlands. Quick-witted Londoners, however, are not slow to observe that, year by year, very few hours have been ticked off by the clock on August 12 before red grouse are exposed for sale in the metropolis. Speedy as are our express trains, it is certain that freshly-shot grouse cannot reach London by 5 a.m. on the morning of "The Twelfth"; consequently it is equally certain that such birds have been killed some hours before the legal season has arrived. The price at which the first birds on the

market are retailed affords sufficient indication as to the reason for this haste on the part of the moorland poacher. Many people like to have grouse upon the table upon the opening day of the shooting season, and to gratify this desire they usually have to pay from 9s. to 12s. 6d. per brace for good young birds. In times of scarcity, after a bad hatching season, or when disease is rampant on the moors, as much as 15s. a brace may have to be paid for the luxury.

The overstocking of a moor is certainly liable to engender disease; due care, therefore, should at all times be exercised to insure against a superabundant stock of grouse being left on a moor at the end of the shooting season. The burning of a due proportion of heather is another matter that should be carefully looked after, as this in its results proves a great help in keeping grouse in a healthy condition. Grouse vary considerably in weight, according to situation; adult males weigh about 22 oz. to 24 oz., and hens some three or four ounces less, but birds are sometimes shot weighing 2 lb. Male grouse measure 16 inches in length. From eight to ten eggs are laid in a general way, but clutches of fifteen are sometimes met with.

THE PTARMIGAN. (*Lagopus mutus*.)

In grouseland we find birds black, red, and white; the first two have already been discussed; the white grouse is the bird known as the ptarmigan. This uncouth-looking name has been bestowed upon a creature that is in itself not a little singular, both as regards habits and appearance. The ptarmigan prefers to exist, year in and year out, upon some of the most barren ground to

be found anywhere in the kingdom; ground whereon, possibly, none other among British birds could survive and propagate its species. Upon the barest and bleakest of hills the ptarmigan lives and thrives, defying the rigours of winters such as are known only at considerable altitudes. The ptarmigan in summer is a totally different bird exteriorly to the white ptarmigan of the snows. In the nesting season the bird puts on a handsome speckled coat, in which grey and browns predominate. This so perfectly harmonizes with the lichen-covered rocks and boulders of its environment that persons are frequently known to walk right over the hen ptarmigan sitting upon her nest. A clever field-naturalist and keen sportsman, the late Mr. E. T. Booth, was once on a visit to the Highlands in the springtime, with the object of securing birds in their breeding plumage, along with their eggs and nests, for an exceedingly interesting collection he was then forming. Some time had been spent one morning in the fruitless search for the nest of a ptarmigan, and it was only by the merest and most unlooked-for accident that the first one was discovered. Luncheon was conveyed on pony-back to the hungry naturalist on that elevated moorland; on the arrival of the pony the girths by which the panniers were fastened were unloosed, when, to the astonishment of all gathered closely around, the buckle of one of these straps fell upon the back of a ptarmigan that, sitting closely upon its nest, had permitted the pony thus to walk up to and stand immediately over it.

In winter, as already indicated, the plumage of the ptarmigan changes to pure white, so that it again assimilates with its surroundings, the snow-clad hills.

In these seasonal changes of plumage the protective hand of Nature is fully displayed, for thus covered the ptarmigan escapes many unwelcome attentions from eagle, fox, raven, stoat, or other predaceous creatures which traverse those lonely hills, winter and summer. British-killed specimens of both ptarmigan and capercaillie do not so often find their way into the game-



PTARMIGAN IN WINTER.

shops, Northern Europe. furnishing our chief supply of these game-birds for the table. The majority of the ptarmigan-like birds reaching this country are, in fact, willow grouse, known in Scandinavia as "ripa," and which is, by the way, a very near relative of our red grouse.

The ptarmigan is the smallest of our grouse family, the male being some 15 inches in length, the female

somewhat smaller. In these islands ptarmigan are found only in Scotland, they having been extinct in the English border counties for a long time. The food of ptarmigan comprises the shoots and tender twigs of ling and other plants, as well as certain leaves and berries found in their exalted habitat. Ptarmigan nest in May, their eggs numbering eight to ten.



PTARMIGAN : SPRING PLUMAGE.

CHAPTER VII—THE GAME-BIRDS (*continued*)

Pheasant—Partridge: grey, red-legged—Quail.

THE PHEASANT.

THE Western World is indebted to Asia for many good things, not least among which is the pheasant. The exact date of the introduction of this bird into Great Britain cannot be traced, although it is generally considered that the Romans brought it over some time during their occupation. The pheasant originally introduced was the dark, ringless species known as *Phasianus colchicus*. Some hundreds of years later the Chinese ring-necked bird, *P. torquatus*, was imported, and these two kinds, as also in some districts the still more recently acquired species, the Japanese green pheasant, *P. versicolor*, have interbred to such an extent that pure types of any of them are now somewhat rare.

Several other forms of the genus *Phasianus*, some of which are very closely allied to the above, are frequently seen in this country. Among these may be mentioned the Chinese ringless, *P. decollatus*; the Formosan, *P. formosanus*; and the Mongolian pheasant, *P. mongolicus*, a ring-necked bird that is held in considerable estimation by North-American acclimatizers of these game-birds. There is also the extremely wild Turkestan pheasant,

P. shawii, a collarless bird approaching somewhat closely in point of exterior resemblance to the common species, as also does the Yarkand pheasant, *P. insignis*, which, however, bears the insignia of the white collar.

Other notable examples occasionally met with in English pheasantries or, more rarely, woods, are the golden and the silver pheasant; Elliot's pheasant, a bird of wondrously fine plumage; Sœmmerring's pheasant, a remarkably long-tailed bird from Japan having copper-coloured feathers bearing a fine metallic lustre; the green-backed golden pheasant; and the cheer, or Wallich's pheasant, a native of the Himalayas. That gorgeous creature, the golden pheasant, has received scant attention at the hands of sportsmen in this country, few of whom have gone to the length of turning it loose in their woods. If report speaks truly, golden pheasants have thriven well and multiplied at a great rate in at least one district in the United States. In Oregon they extended themselves over a radius of ninety miles from the turning-out point in the short space of four years. Sportsmen there describe them as being hardy and fairly easy of domestication, although not quite so prolific in that country as are some others of the pheasant family.

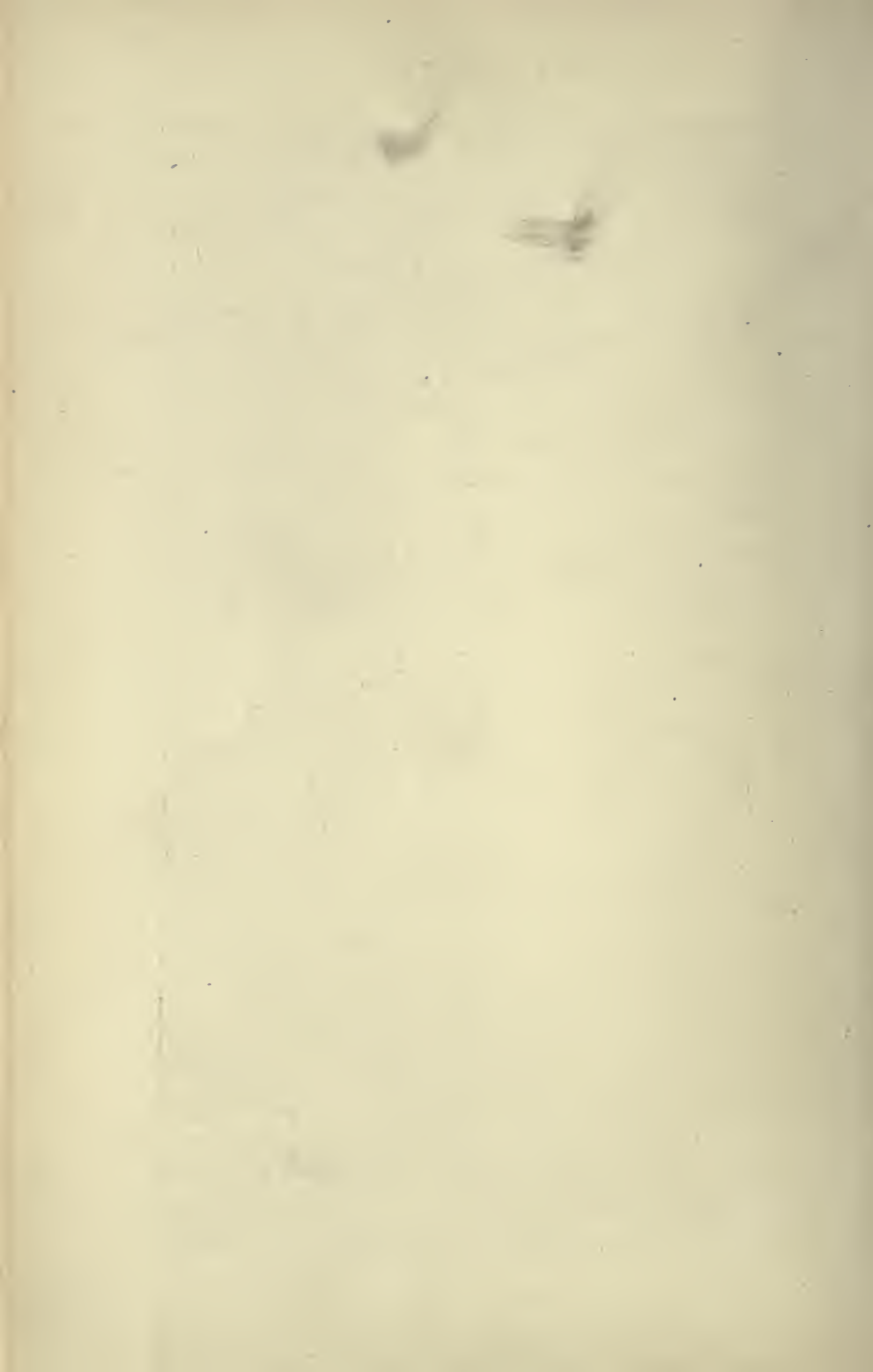
An effort, happily attended by a considerable amount of success, is now being made to establish the bar-tailed, or Reeves' pheasant, *P. reevesii*, in various suitable districts in England and Scotland. At Guisachan, in Ross-shire, this bird has been turned down by Lord Tweedmouth, and is reported to be doing well, the rough character of the country exactly suiting its requirements. At Balmacaan, on Loch Ness, Lord Seafield has made similar experiments. In England,

Reeves' pheasant has been turned out by the late Lord Lilford in Northamptonshire, by Lord Walsingham at Merton Hall, Norfolk, and by Lord Rendlesham in Suffolk. It is to be hoped that other owners of suitable coverts may follow the example of these sportsmen, for Reeves' pheasant bids fair to make a first-rate sporting bird, and prove at the same time a most ornamental and pleasing addition to our woodlands. Once seen, the male of this species is scarcely likely to pass out of recollection, for it is at all times, either in the air or on the ground, immediately to be recognized by its extraordinary tail, which in fully adult birds attains to a length of six feet or more. The plumage also is most beautifully varied, black, white, chestnut or golden-yellow being pleasingly intermixed. The true proportions of this remarkable bird can, perhaps, best be realized when it is seen on the wing; it then forms a most striking object, its total length being considerably more than twice that of the common pheasant, which, by the way, it also exceeds greatly in the speed of its flight.

Some owners or lessees of pheasant-coverts attach little importance to the matter of keeping their birds true to type. As a matter of fact, try how one may, to preserve any particular variety in uncontaminated state is at all times a well-nigh impossible undertaking in the case of birds running absolutely at large. The polygamous nature and roving disposition of the cock pheasant operate against this. Thus, if one proprietor adheres strictly to the old, dark variety and his neighbour to the ring-necked species, the birds, from their respective coverts sooner or later meet, and crosses will be observable. In this connection it will be of interest to observe that whenever the dark-necked, the



REEVES' PHEASANT.



ring-necked, the Japanese, or other of the true pheasants interbreed, the resulting crosses will be found to be perfectly fertile. Little apprehension need be felt, therefore, that the intermingling of these species will have the ultimate effect of lessening production. With the newly-introduced Reeves', or bar-tailed pheasant, this does not hold good. One of our greatest authorities on the pheasant, Mr. W. B. Tegetmeier, states positively that whilst the existence of the cross between Reeves' and the common pheasant has long been known, it is undoubtedly a hybrid which will not breed. He, indeed, goes a step further, by conveying the somewhat startling information that Reeves' pheasant may be regarded as being not merely specifically, but generically, distinct from the true pheasants. Such conclusion, if correct, is the more regrettable as calculated to act as a deterrent to the more general introduction of this fine sporting bird. Possibly, however, it may turn out, on further investigation, that whilst unproductive among themselves, these half-breeds might prove to be fertile when paired with either Reeves' or the true pheasant. Save for this untoward circumstance, everything appears favourable to the introduction of this new and extremely interesting game-bird. Coming from North China, Reeves' pheasant has proved itself to be most hardy and well able to withstand the rigours of our winters, even as felt in the more elevated and exposed plantations of North Britain. The strong and rapid flight of this bird at once commends it to the notice of the gunner; moreover, game-preservers have already found that it is quite a simple matter to introduce these pheasants, for by placing Reeves' eggs into the nests of our own wild birds the young birds are thus easily reared in a state of nature.

The game-preserver of to-day is so happily situated that he need not have recourse to any dubious source for a supply of pheasants or of pheasants' eggs wherewith to improve and increase the stock of birds upon his sporting property. There are at the present time many game-farmers anxious and ready to supply his needs. He can have in due season, and almost at a moment's notice, strong young hen or cock pheasants, full-winged, wild-bred, and freshly-caught-up birds for stock purposes. In the matter of pheasants' eggs there is also a practically unlimited supply and wide range of choice. If it is desired to strictly adhere to any particular species, the eggs from pure dark-necked—the so-called "old English"—or from ring-necked pheasants can now be had in almost any numbers. But the choice as to variety by no means stops here, for Reeves', Versicolour, Amherst, Elliot's, Mongolian, and fancy sorts such as Golden pheasants, birds or eggs, are now easily procurable.

I have before me as I write the price-list of the pheasants' eggs offered by one well-known game-farm. Herein the eggs from either the ring-necked or the dark-necked kind are offered at the following rates:—

				Price per 100		
				£	s.	d.
Before April 20 . . . . .	.	.	.	4	7	6
From April 21 to May 2 . . . . .	.	.	.	4	0	0
From May 3 to May 12 . . . . .	.	.	.	3	15	0
From May 13 to May 20 . . . . .	.	.	.	3	10	0
From May 21 to May 26 . . . . .	.	.	.	3	0	0
From May 27 to May 31 . . . . .	.	.	.	2	7	6
June eggs . . . . .	.	.	.	1	10	0

All are guaranteed to be freshly gathered daily from the pens, and there is the further and all-important guarantee accompanying these eggs that at least 85 per

cent. shall prove to be fertile—some game-farms go so far as 95 per cent. in respect of their guarantee of fertility. The above prices are subject to a bonus of ten eggs to each hundred for cash payments.

The success attendant upon the efforts of pheasant-rearers in this country has at length proved a remarkably stimulating example for trans-Atlantic sportsmen. During recent years North-American shooters have been giving considerable attention to the finding of suitable substitutes for their sadly-depleted stocks of indigenous game-birds. Pheasants, therefore, have been introduced into several districts in the United States, and it is gratifying to learn that in several instances a fair measure of success has rewarded the attempt to naturalize this fine game-bird.

British game-preservers long ago discovered that the hen pheasant is not the best of mothers, and that, as a consequence, small broods invariably result whenever the birds are allowed to follow their natural bent and run wild. On estates where heavy stocks of pheasants are maintained the method of sitting the eggs under foster-mothers and of hand-rearing the young birds is adopted. This plan entails an increased amount of labour and of course necessitates a correspondingly heavy expenditure, both on this head and in the way of suitable food for the young birds. It is, however, the most successful plan to follow where any considerable stock of pheasants is to be maintained upon a restricted area. In following out this plan it was formerly considered sufficient to rely for the supply of eggs upon the birds running wild in the woods; in recent years there has been found to be some considerable gain in this matter by gathering the eggs from birds kept in confine-

ment. The keeping of a certain number of the breeding pheasants in pens is productive of much good, for thereby the proper proportion of hens to cocks can be maintained. There is, in addition, some economy effected in the matter of food and, perhaps, also in the labour of the game-watchers—the latter some slight consideration when we think of the constant source of anxiety



COCK PHEASANT.

the watching of considerable numbers of the nests of wild game-birds must prove to the head-keeper on any extensive estate during the months of April, May, and June. It must not, however, be inferred that the method of penning is exclusively adopted, for on most estates a good proportion of hens are allowed full liberty, their eggs in many instances being gathered and, as already observed, hatched out under foster-mothers. It is generally reckoned that wild pheasants

will lay from twelve to fifteen eggs in a good nesting season, but that if allowed to hatch out these themselves a loss of at least fifty per cent. will result before the young birds arrive at maturity. With eggs hatched out under foster-mothers a good pheasant-rearer may under ordinary circumstances be relied upon to bring from seventy to seventy-five per cent. of his young birds to the gun. If not overcrowded, healthy hen pheasants in pens may provide the rearer with something like twenty-five eggs each per season.

Pheasants are decidedly omnivorous feeders, their dietary taking a remarkably wide range in accordance with the seasons. There are few situations in this country where pheasants would be unable to pick up a living; in fact, adaptability in this respect, no less than general hardiness, has doubtless greatly contributed to the thorough acclimatization of these birds in a climate so variable as is this of Great Britain. To the pheasant few things come amiss in the way of food, from maize, wheat, or barley, to the eggs of a species of oak-gall fly, or the tough wireworm; from hazel-nuts, acorns, and berries to field-mice, lizards, and immature vipers. Although taking toll of the farmer's grain fields to some extent there can be no denial of the fact that the pheasant makes handsome return for such damage. One of the benefits conferred by this bird upon the agricultural community is the destruction of wireworms and similar pests of the farm. Hundreds of wireworms, as many as 1200 in one case, have been taken from the crop of a single pheasant, and when it is reflected how much good a few score of these birds, making two such meals per diem, can effect in the way of clearing the turnip or other young crops of these highly-injurious

pests, pheasants should take high rank in the estimation of the farmer.

The normal weight of adult cock pheasants ranges from 3 lb. to 3½ lb., hens being about 1 lb. lighter. Birds fed almost exclusively upon maize sometimes weigh as much as 5 lb., the record weight for a maize-fattened cock pheasant being, so far as I am aware, 5 lb. 15 oz.

THE GREY PARTRIDGE.

In England we now have two distinct kinds of partridge, the common or grey partridge, *Perdix cinerea*, which is indigenous, and the red-legged or French partridge, *Caccabis rufa*, introduced from the continent of Europe. Whenever the word partridge is mentioned among sportsmen in this country every one is cognizant of the fact that the grey partridge is the bird in question, the other variety being known familiarly as "Frenchman," or "red-leg." The grey partridge is, *par excellence*, the popular game-bird of this country. Red grouse, black game, and pheasant may be reserved for more fortunate sportsmen, but north, south, east, or west, nearly all gunning enthusiasts—limited though some may be as to time or opportunities—may have their share of partridge shooting. And right good health-giving sport it is following the bonnie brown birds over golden stubbles, or amidst luxuriant root-crops, on gloriously sunny days of our late English summer or early autumn. As a consequence, therefore, of the high esteem in which the partridge is held, both as a sporting bird and as a table delicacy, the opening day of the shooting season, September 1, has been

regularly looked forward to with keen anticipation by thousands of eager gunners in England for many decades of years.

The grey partridge is essentially a fowl of the grain-fields and cultivated lands. Land that is tilled with the most scrupulous care, and which bears the heaviest crops of grain, turnips, potatoes, and green food, may invariably be relied upon to carry a greater number of partridges than will pasture-land, or even ill-farmed arable land carrying light and weed-choked crops. Wherever the area of tillage is restricted, or land is allowed to go out of cultivation, some diminution in the number of partridges carried by that land assuredly results. In fact, partridges persistently follow the cultivation of the soil, and this has been exemplified to a remarkable degree in Russia of late years. In a recent article in *The Spectator* it was related that in that country the partridges have so steadily followed the plough as cultivation has progressed from the south to the furthest northern latitude at which rye and wheat will grow, that they have almost taken a place in the list of sub-arctic game-birds.

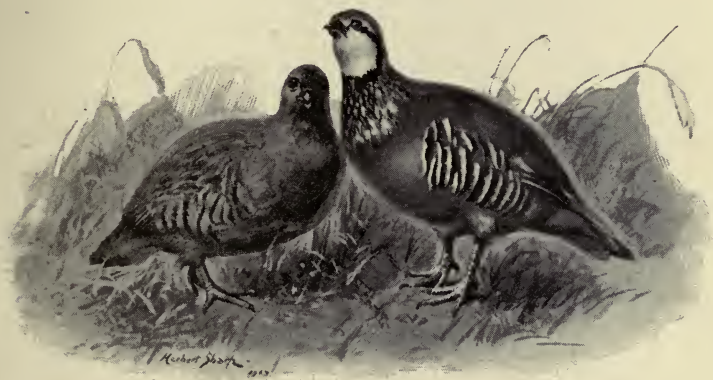
Partridges withstand the vicissitudes of our climate, the extreme variations between heat and cold, with remarkable fortitude. They, however, thrive best in the hottest and driest of our summers, and it is the invariable rule that the heaviest bags of these birds are obtainable in those shooting seasons following dry summers. More than a century and a half ago old Gilbert White of Selborne quaintly remarked that partridges were so exceedingly plentiful after the dry summers of 1740 and 1741 that "unreasonable sportsmen killed twenty and sometimes thirty brace in a day."

Little did that Hampshire ecclesiast anticipate that the sportsmen of a later period would be shooting ten times that quantity in a day. Could he but have foreseen these times he would in all probability have been quite as much amazed at the increase among partridges as by the present-day improvements in guns and gunnery.

The partridge is little hurtful to the interests of the farmer at any time, in fact, throughout the greater part of the year it is extremely useful in ridding the land of many grubs and insect pests, and therefore it has long been looked upon with much favour by all, non-sportsmen included. As will be imagined, the largest and heaviest partridges are usually to be met with upon cultivated lands; these birds, too, are somewhat whiter-fleshed than are those frequenting the heaths and waste lands of this country. The smaller heathland birds, feeding upon heath and berries, frequently acquire a slightly gamey flavour more nearly approaching that of the red grouse. Fully-matured grey partridges are sometimes to be found weighing fully 1 lb.; their average weight, however, may be put down at from one to two ounces less than this. Exceptionally heavy corn-fed partridges have been shot from time to time, at weights ranging from 17 oz. to 19 oz. I have not yet heard of a grey partridge attaining to a weight of 20 oz.; two birds reported by Mr. J. E. Harting as shot upon the turnip and barley lands of Norfolk, carry the record for weight so far, one weighed 19 oz., the other reached the splendid figure of 19½ oz.—a truly remarkable and well-fed brace of birds.

Partridges usually pair in February, but in mild winters pairs are commonly found in January some

time previous to the close of the shooting season. About the fourth week in April partridges begin to lay their eggs in our southern counties; further north and in elevated situations May is frequently well advanced before their eggs may be discovered. Incubation lasts twenty-one days, and in forward situations young partridges are hatched out soon after the middle of June; from Midsummer Day to the end of the month



GREY AND RED-LEGGED PARTRIDGES.

being the principal hatching-out time. Partridges are prolific layers, and one hen bird will lay from twelve to twenty eggs. Two hens sometimes lay in one nest, in which event as many as thirty eggs, or more, have been noticed. Instances are by no means rare in which the eggs of grey and red-legged partridges, as also the eggs of partridge and of pheasant, have been found in one nest.

Thousands of partridges, chiefly imported from Hungary, have been turned down upon English manors within recent years. These Hungarian birds do not

differ specifically from our own grey partridges, and it is gratifying to learn from those who have incurred the expense that partridges so enlarged have materially assisted towards the increase and improvement of the native stock. Another method calculated to increase the yield of partridges is carried out by the keepers on some large estates; this consists of an interchange of eggs between nests situated as widely apart as possible upon their ground. Thus, quietly and unobtrusively, an interchange of blood may be effected which, in greater or lesser degree, according to the size of the property, will obviate the ill effects of in-breeding, and so strengthen and invigorate the stock of partridges upon an estate. If due care is exercised in carrying out this plan the birds will not forsake their nests; but it should not be attempted when partridges are sitting, neither, in any case, must eggs in different stages of incubation come together.

The traffic in stolen game-birds' eggs assumed most serious proportions some few years ago, thousands being pilfered from the nests by farm-hands and loafers, who thus reaped a golden harvest during the spring months. Apparently in Essex and East Anglia the practices of the egg-thief were at their fullest development. Four or five years ago there was a very heavy return of prosecutions from various petty-sessional courts relative to cases of egg-stealing in that section of the country. Some of the thefts involved the taking of many hundreds of partridges' and pheasants' eggs; in fact, the numbers of stolen eggs found in the possession of certain thieves and receivers amounted annually in the aggregate to many thousands. These eggs, of course, were stolen for gain, and we may assume that

without purchasers there would exist no inducement for the committal of such thefts. Certainly, therefore, it seems to me that the game-preserver holds the remedy very much in his own hands; avoid promiscuous dealings in eggs—that is to say, dealings in which the eggs cannot be clearly and indisputably traced as coming from some source above suspicion—and then I think we might say, exit egg-thief. Little reflection is needed to bring the conviction that the purchasing of eggs without due inquiry as to their source of origin is bad in principle. This, if only for two obvious reasons—first, that by such indiscriminating purchase harm may be done to some brother game-preserver; and second, that in this way even one's own eggs may be bought. I have not the least doubt that, now and again, eggs have been paid for that were of right already the property of the purchaser. Latterly, game-preservers, realizing that unity is strength, have commenced to band themselves together so that by mutual understanding and agreement they may secure the more efficient protection of their separate interests and estates.

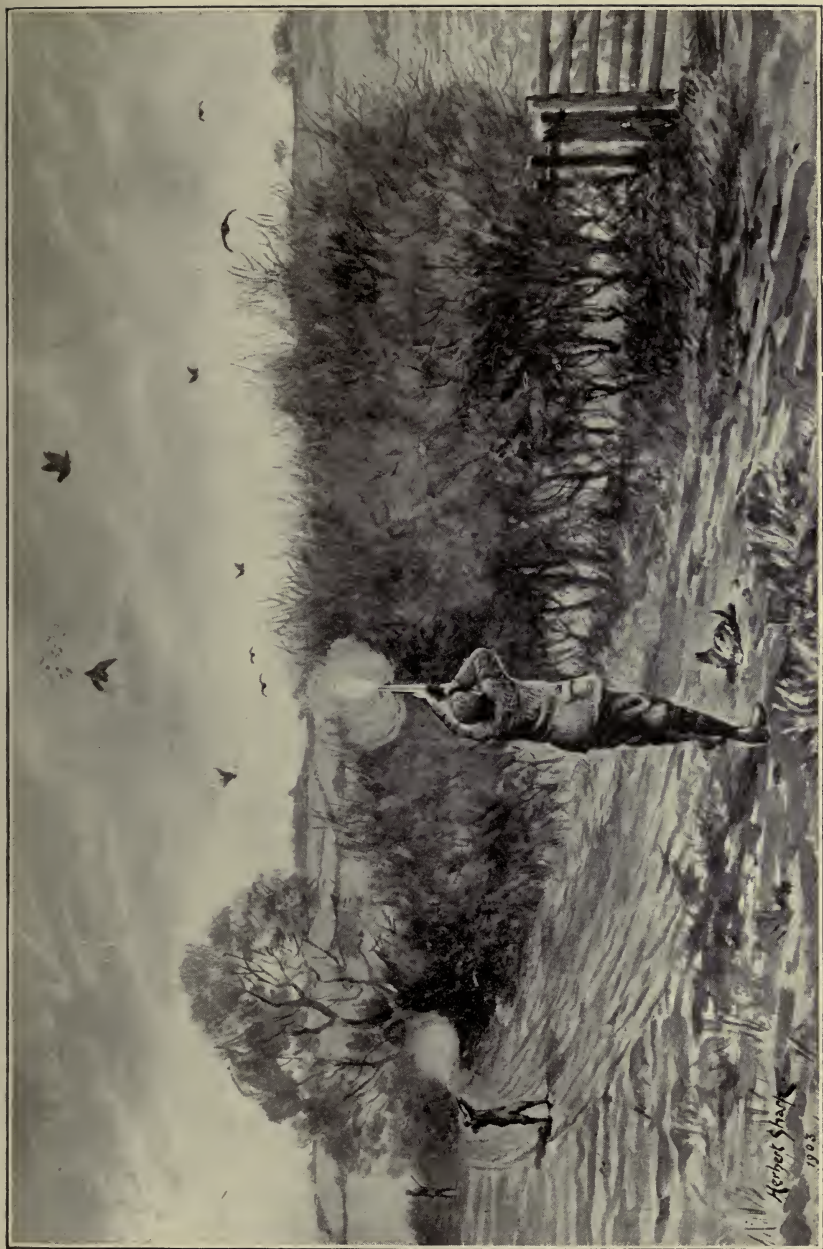
A most destructive complaint, known as gapes, sometimes works havoc with game-birds; before its ravages the unremitting attentions of the best of game-rearers avail but little. The cause of the trouble has been traced to a minute parasite which infests earthworms. The partridge, or pheasant, as the case may be, swallows the earthworm, and the embryo of this parasite, which is known to scientists as *Syngamus trachealis*, is liberated and becomes attached to the respiratory organs of its victim, whose death it invariably shortly afterwards brings about. A valuable paper on this parasite was

published some time ago by the Entomological Society of London, and this recommends a solution of 15 grains of salicylate of soda in 1500 grains of distilled water, to be mixed with the water given to hand-reared birds. Turpentine is said to be in some degree efficacious when applied to the windpipe of the sufferer by means of a feather. But in this case the trouble must not have become too deep-seated, or the remedy will be quite ineffectual, and it, of course, is not applicable in the case of wild birds.

Albinisms and variations of colour in the plumage of the partridge are not uncommon. As far back as 1796, a covey of partridges at South Cave, in East Yorkshire, was noted as containing four albinos of the purest white, three others of the same brood being pied. Buff or cream-coloured varieties are not rare, whilst those having white horseshoes upon their breasts, in place of the usual chestnut shoe, are sometimes seen. The plumage of our grey partridge, like that of many other birds, will be found adapting itself in some degree to its environment. Birds from deep-coloured soils or gravels are frequently of a rich rufous red; in other districts may be found considerable alteration in the general tone of colour, some birds, in extreme cases, being found almost as light in colour as are the pale-plumaged partridges of the Russian snowfields.

THE RED-LEGGED PARTRIDGE.

This bird, also known in this country as the French partridge, appears not to have been an indigenous species, its introduction apparently dating from the time of Charles the Second, during whose reign several



AN ESSEX PARTRIDGE DRIVE.

Herbert Sharp
1903

pairs were turned down in the neighbourhood of Windsor. For some reason or other this effort met with poor success, and it was not till 1770, or thereabout, that the successful acclimatization of the red-legged partridge in England may be said to have commenced. In that year the Marquis of Hertford and Lord Rendlesham each procured eggs of the red-legged partridge from the Continent, the young birds from which, hatched out under domestic fowls, were turned down in Suffolk. From that time onward, and more particularly after further importations by Lords Alvanley and De Ros in 1824, red-legged partridges obtained a firm foothold in Eastern England, and gradually spread themselves over the adjacent counties.

The red-legged partridge, with its red beak and legs, black gorget, warm, umber-brown upper parts, and, transverse barrings of delicate pearl-grey, white, black and fawn on sides, flanks, and thighs is a strikingly handsome creature. It forms a most distinctive and pleasing addition to the little-varying game-bag of the September sportsman in several eastern and southern counties of England. It exceeds our grey bird in length about one inch, and it is also considerably heavier, several red-legs of over 20 oz. having being shot. The heaviest recorded weight for a red-legged partridge, so far as I am aware, is one of 25 oz., killed at Hanworth in Norfolk.

The opinion was formerly held that the red-legs were quarrelsome neighbours, and that, being stronger than our native partridges, they drove the latter about in the nesting season. Instances may not be wanting where this may have occurred, still, it is probably far

from general. In any case the two species appear to have since become thoroughly accustomed to each other, for in many districts with which I am acquainted, they certainly now live in amity side by side; so much so in fact as occasionally to lay their eggs in each other's nests. Red-legged partridges show greater liking than do the grey birds for securing some elevated position upon which to perch. Now and again they may be discovered perched in trees or fences or upon a gate. I once saw a covey of red-legs fly up to, and alight upon a wall some 18 or 20 feet in height. Occasionally these birds will choose for a nesting site the thatched roof of some low building, or the top of a corn or straw stack, and I once discovered a nest in the head of a low pollard-willow near Southend in Essex. The full complement of eggs in the nest runs to about fifteen or eighteen, and these eggs have a yellowish-white ground spotted and freckled over with red or brownish-red. Red-legs go to nest somewhat earlier than the common partridge.

THE QUAIL. (*Coturnix communis*.)

Years ago Great Britain and Ireland, the latter especially, would seem to have possessed a body of quail that was more or less resident. Whether this residential character was attributable to the existence of a purely native race or simply to those migratory birds whose tastes inclined them to winter here in preference to journeying southward, is a question that has not been decided, so far as I am aware. At the present time a winter quail is a great rarity in Great Britain, this diminutive game-bird being now only a

summer visitor arriving annually in the spring for the purpose of breeding, and leaving some time about the end of September, or during the first half of October.

During summer quail may be found sparingly, but widely-distributed throughout the British Isles. In most English counties, from Cornwall to the bleaker lands north of the Humber, from that eastern shoulder known as East Anglia right to the far west, quail are to be noted in numbers varying in accordance with the suitability of certain districts to their requirements or to the strength of their annual visitation. In Scotland, these birds are occasionally met with all over the country, and they have been found nesting in the distant Outer Hebrides, the Orkney and the Shetland Islands. In Ireland, quail were tolerably plentiful during the first part and up to about the middle of the nineteenth century. They were then commonly found upon the farm lands throughout the year, being, in fact, more numerous than the partridge, and as a consequence sportsmen of the period were able to make considerable bags of these birds. Quail evince much partiality for the cultivated lands, and their gradual decrease in Ireland has by some been attributed to the reversion of considerable stretches of the tilled lands to their original condition of pasture, consequent upon the great famine of 1846-48. Since the early eighties of last century, few if any winter quail have been recorded in Ireland.

Occasionally during the past twenty years or more an extraordinary influx of migratory quail has been noted in Ireland, and in England and Scotland also. In the years 1892, 1893, and 1896 we had remarkable

visitations of quail from continental Europe, and this perhaps is to be accounted for in some degree by the fact of the spring months in those years being exceptionally dry. This notwithstanding, it cannot for one moment be doubted that in late years there has been a marked diminution of numbers in respect of our annual visitation of quail. The wholesale destruction meted out to the large flocks of migratory quail along the Mediterranean littoral is doubtless greatly responsible for this falling off. In Egypt alone hundreds of thousands of quail are taken each year for exportation to foreign countries. Figures furnished by Lord Cromer in a recent official report show that the average number of quail annually exported from Egypt during the five years 1892-96 amounted to 1,100,000. In 1896 the enormous total of 1,231,489 was reached, and of these 1,041,744 were sent to France, 155,245 to England, and 34,500 to Italy. But even these figures, startling as they may appear to both naturalist and sportsman, convey but a feeble impression as to the number of quail yearly consumed in Great Britain. It is reported on excellent authority that hundreds of thousands of these birds are brought, alive or dead, to the London market from the shores of the Mediterranean Sea. These importations commence in February or March, and last for several months. The majority of the quail arriving here are sent from the north coast of Africa, and for some years the consignments were brought overland by way of Marseilles.

The Association of Chasseurs Français recently revolted against this state of affairs, and in a petition bearing no less than 6000 signatures asked the French Minister of Agriculture to prohibit the transit of live

quail across France from Africa to England, on the ground that it was prejudicial to the interests of that body of sportsmen. Acting on this, the Minister was in due course authorized by the Cabinet to prohibit the transit of live quail across France. This prohibition has not had the effect of stopping the traffic, for the birds have since been sent by other routes. In the spring of 1899 the Cunard steamer *Tyria* arrived in the Mersey with a number of crates containing no less than 30,000 live quail, which had been caught in Egypt and consigned to the London market from Alexandria. This consignment was under the charge of two Egyptians, and complete arrangements had been made for feeding the birds during their lengthy voyage.

It appears that the systematic fattening of quail for the market is followed even in this country, thousands of live quail on arriving here being taken to "farms" round London and there fed up until they are sufficiently plump to be placed on the market. We hear of the cramming of poultry by various means, mechanical or otherwise, but, according to one of the London evening papers, a more ingenious and scientific method has been discovered for insuring the hasty fattening of quail for the market. Quail, like other well-ordered birds, are most regular in their habits, and feed directly they wake up in the morning. Profiting by this knowledge the quail-fattener places his little game-birds in a cellar lighted only by electric light. In the dark the quail go to sleep, but directly the light is switched on they wake up and breakfast. This process is repeated time after time, and the deluded birds, always labouring under the impression that morning has arrived once more, keep waking up and breakfasting over and over again.

The European quail is quite distinct from the quail of the North-American sportsman, the familiar "Bob-white" (*Ortyx virginiana*). The term quail is not, however, constantly applied to this last-mentioned game-bird, for gunners in the United States frequently speak of it as "partridge."

The quail is an excellent weed-destroyer; in fact the bird is said to subsist in great measure upon the seeds of weeds such as dock, chickweed, wild vetch, plantain persicaria, etc. They, therefore, are distinctly beneficial in the cause of agriculture, and for this reason alone deserve to receive every encouragement and all due protection.

The trisyllabic spring call-note of the quail—which has caused it to be styled by some modern naturalists, *dactylisonans*—is familiar to many having the privilege of passing some of the days of spring or early summer in the country. This call-note enables those acquainted with it to unerringly detect the presence of quail when otherwise they might remain in total ignorance of their proximity. This call is unmistakable; to me it seems best represented by "quit-qui-quit," but many and varied attempts have been made to give vocal expression to this bird's call-note. Some English country-folk liken the cry to "wet-my-lips" or "wet-my-feet"; whilst in Germany the peasants tell you the quail says "Buck den Ruck."

The quail will lay from nine to fifteen eggs of yellowy-white, blotched and spotted with dark brown; and it is said that in favourable situations and seasons two broods are reared. The sportsman's term for a brood of quail; is bevy.

CHAPTER VIII—THE GAME-BIRDS (*continued*)

Landrail—Woodcock—Great Snipe—Common Snipe—Jack Snipe.

THE LANDRAIL. (*Crex pratensis*.)

ALTHOUGH no strikingly close affinity exists between quail and landrail, it accords with the general fitness of things that the description of these two birds should come together. In very remote times, centuries prior to the Christian era, the landrail was styled "Mother of quails," it being a popular belief among the most highly-civilized nations of that age that the landrail was the forerunner or leader of the quail when on migration. This supposition has been well handed down to posterity, for at the present time, along the shores of the Mediterranean, the landrail is called by various names, signifying "king," "leader," and so forth, of the quails.

This migrating game-bird is a summer visitor to Britain, and to many of our country-folk it is known as corncrake or, more particularly in the north, as dakerhen. In the southern counties of England, it may be expected to arrive about the third week in April, whilst possibly the end of that month, or even May, will have arrived before the presence of the bird is noted north of the Humber. Landrail are frequently met with by partridge-shooters in the early season, but by the end of

September the majority of these birds will have departed to winter in Africa. Now and again landrail are seen here in October, and occasionally they are found passing the winter in England, but more frequently has this occurred in Ireland and in that group of islands known as the Outer Hebrides, the remarkably mild character of the winters there experienced appearing to suit these birds. Wherever landrail are met with here in winter under less favourable climatic conditions, they are supposed to be merely late-hatched or possibly wounded birds that had been physically incapable of proceeding southward at the time of the autumnal reflux.

The grating call-notes of the landrail are familiar to most people who have resided in various parts of the country during May. Although at first welcomed as the harbinger of spring, the rather harsh and penetrating "crek-crek, crek-crek" of the corncrake may after a time prove somewhat tiresome, as it proceeds with but little intermission so long as daylight lasts in those glorious days of early summer. The landrail is so remarkably shy and retiring of habit that its presence would often pass unnoticed were it not for its well-known cry. Its food comprises slugs, snails, worms, and some seeds, and although much frequenting the rich meadows and low-lying fields in the vicinity of water, this is not exclusively its habitat in this country, for it may be found upon the drier, corn-growing lands. I have shot landrail upon the more elevated districts of the Wiltshire Downs and the Yorkshire Wolds, some hundreds of feet above sea-level, and in Scotland a landrail has been met with at an altitude of 2500 feet.

Those whose acquaintance with the landrail is limited to casual and infrequent meetings in September might

be excused for imagining that the extraordinary running powers displayed by this bird have been developed at the expense of its wing-power. Under the circumstances the supposition would be far from unwarrantable, the impression gathered of the bird at such times being that of an abnormally strong runner and weak flier, its shortness of wing and seemingly laboured wing-beats adding to the latter impression. The landrail, however, is really capable of most extended and arduous flights, for on migration it covers considerable tracts and breadths of continent and ocean. It has been found breeding in the Færo Islands, whilst in far-off Greenland two examples have been obtained. Mr. Howard Saunders states in his excellent *Manual* that landrails have frequently crossed the Atlantic, and have been obtained on the eastern seaboard of North America.

A landrail on the wing is calculated to deceive in one other way besides that of its flight. As seen in the air, one might well be excused for assuming its proportions to be not greatly less than those of the partridge. On getting the bird in hand, however, such thought will be quickly dispelled, for it will then be found that the landrail is a lean, lank creature, totally different in form and substance to the rounded, plump grey partridge. On placing the landrail upon the weighing-scale the true difference between the two birds is even more apparent, the weight of the landrail seldom reaching 7 oz., or rather less than half the average weight of our English partridge. Occasionally landrails may be found weighing half-a-pound, the highest recorded weight for this bird being 9 oz. The length of adult birds is about ten and a half inches. Perhaps the worst fault to be found with the landrail as a table-bird is that there

is not more of it; still, like the snipe, it is remarkably good eating, so that the gourmet, at any rate, will concede that what is lacking in quantity is made up for in quality. The landrail lays from eight to twelve eggs, in a slight hollow in the ground, which it lines with dry grass. The eggs have a creamy or reddish-white ground, spotted with grey and light red or reddish-brown. The eggs cannot very well be mistaken for those of the quail, as they are of different form and considerably larger, being nearly $1\frac{3}{4}$ in. long by 1.1 in. broad.

THE WOODCOCK. (*Scolopax rusticola*.)

Of all migratory fowl the woodcock, perhaps, is the one most prized by the game-shooter. There is this anomaly respecting the sporting status of the woodcock, that whilst generally regarded by sportsmen as a game-bird, it is not characterized as game in our principal Game Act (1 and 2 Will. 4, cap. 32). This notwithstanding, the woodcock has, in a measure, since come to be regarded as worthy of the protection accorded to partridge and pheasant, for by the Act 23 and 24 Vict., cap. 90, a licence to kill game is now required by all those who shoot the woodcock. And, by the way, it may just be as well to mention here that sportsmen who shoot quail and landrail, the two birds last described, must be similarly equipped in this matter of a game licence.

Although I have spoken of the woodcock as a migratory bird, it is a fact tolerably well known that some do remain to nest in this country. Moreover, sportsmen generally have more or less cause for con-

gratulation in that the numbers of the woodcocks remaining to breed in Great Britain have considerably increased during late years. In all probability this increase may be put down to the protection now afforded by the Wild Birds' Protection Act, 1880, which places an effectual barrier against their slaughter in this country during March, when these birds are either nesting or on their way north. Information gleaned during the past few years conveys the gratifying intelligence that there is now scarcely a county in Great Britain in which at least a few pairs of woodcock do not remain to breed, and this not alone in the northern part of the kingdom, but also in extreme southern counties. For instance, careful inquiry made some few years ago by Mr. T. J. Monk, of Lewes, among owners and lessees of game-coverts, and their keepers, elicited the information that in seven districts of East Sussex, comprising twenty-one parishes, it was estimated that there were annually from one hundred and fifty to two hundred woodcocks' nests. Doubtless further particular inquiries, elsewhere conducted, would reveal the information that the woodcock as a nesting species is decidedly on the increase in this country. All the same, it is extremely problematical whether these British-bred woodcock will ever go to swell the game-bags of British sportsmen, seeing that to do so they must remain here for the winter. Such stay would, of course, imply the abandonment of their migratory instinct, and this, I take it, is in the highest degree improbable, for these home-bred woodcock, no doubt, have the migratory instinct quite as deeply implanted in them as have the Scandinavian or other foreign-bred 'cock. Thus, probably, the woodcock reared in his

woods are lost to the pheasant-shooter of this country, whose coverts are seldom invaded before the autumn leaves have fallen; by that time, if my supposition prove correct, these birds will have departed southward, where, in their turn, they may provide sport for the gunners of Spain or of Albania—who knows?

Undoubtedly the interest of the sportsmen of this country must chiefly centre upon the migratory woodcock, for the birds which come to winter here are a hundred times more numerous than are those remaining here throughout the summer. The annual autumnal migration of the woodcock has long attracted the attention of both naturalist and sportsman. A glance at the short, rounded wings of the woodcock does not convey the impression that this bird is built for flying long distances. In fact, judging solely by appearances, one might perhaps be excused for putting down the woodcock as an out and out stay-at-home. Still, as is often the case when folk judge merely by externals or jump to conclusions generally, such decision would be entirely erroneous, for woodcock are capable of undertaking somewhat lengthy and arduous flights of several hundreds of miles at a stretch when journeying between these islands and their nesting-places in Northern Europe.

Large flights of woodcock now and again reach our eastern coasts in October or November. The birds undertake their extensive journeys by night, and, year by year, I have known them to be found along the coast within a few days of the middle of October. Flamborough Head and Spurn Point, in Yorkshire, are favourite landing-places for the over-sea woodcock, the birds, so the natives aver, being attracted thither by the



AN OCTOBER WOODCOCK.

brilliant light from the lighthouses which are situated at those two places. These autumn migrants are frequently found in considerable numbers elsewhere along the coastline—in Scotland, Northumberland, Lincolnshire, and on that bold shoulder of Norfolk which, reaching so far eastward, invariably proves a safe draw for many birds of passage. Hundreds of woodcock sometimes arrive in one flight at these landing-places. They usually alight in the night or early morning, and if unmolested they remain in the vicinity one day to recuperate after their long journey, afterwards proceeding to the inland coverts or their still more favoured haunts on the western side of our islands; others, it may be, make off to winter in Spain and the sunnier south.

Prior to the passage of the Wild Birds' Protection Act, 1880, various non-sporting contrivances, glade-nets, springes, snares, and the like, were employed for capturing woodcocks. Another method scarcely, if indeed at all, less deadly than the foregoing, was practised antecedently to 1880; this was the shooting of woodcock on the road to their feeding-ground at flight-time. In the evening twilight of the closing days of winter or the early days of spring, the gunner, stationed by ride or glade in the woodcock-covert, intercepted the passing woodcock as certainly as the silent and deadly glade-nets suspended by poacher or keeper of a by-gone period. It was little to be wondered at that with such practices in vogue the woodcock failed to make much headway as a British nesting species, for, going to nest in March, as this bird commonly does in this country, the spring shooter must often have killed his quarry coming straight from its nest.

Now that the extensive netting and snaring of wood-

cock has in this country given way to the more sportsmanlike method of shooting, and more especially since efficient protection has been given to the birds in the spring-time, some increase in the numbers of our summer woodcock may be looked for. Whether the numbers of our winter woodcock will similarly increase is a matter probably largely dependent upon the tactics pursued by sportsmen and others in the lands in which these migrants are bred. If report speaks truly, the eggs of the woodcock are there gathered for the table in the same way as are plovers' eggs with us, and as this is coupled with the extensive shooting of these birds by Scandinavian gunners in the spring months, any marked increase in the numbers of woodcock wintering in this country cannot be expected.

The woodcock is monogamous, the female usually lays four eggs, and, with us at least, often rears two broods in a season. The usual weight of the woodcock is about 12 oz., but some that are quite as heavy as the average partridge are occasionally killed. The length of this bird may be put down at 14 inches, or a little more, and its wing-stretch at about two feet. The sexes of the woodcock are scarcely to be distinguished, either from the size of the birds, or by the coloration of their feathers. At various places along the east coast, where I have frequently been shooting at the period of the autumnal migration of these birds, I find that some old residents hold the opinion that two distinct races of woodcock reach our shores during October and November, one a very red and small woodcock, and the other a larger and lighter-coloured bird. They asseverate, on what grounds I am unable to say, that the former comes from the extreme north,

and the large bird from the south of Norway and Sweden, and from Denmark and North Germany.

SNIPE.

Three kinds of snipe are met with in the British Islands. These are the Great or Solitary Snipe, the Common Snipe, and the Jack Snipe. Some little confusion has long existed with regard to the identification or classification of snipe-like birds amongst those who either have had few opportunities for comparing the various species of long-billed marsh-frequenting birds, or, if they have, are careless in the matter of their observations. Thus it has come about that certain small shore-birds are frequently designated as snipe. For instance, the Dunlin (*Tringa alpina*) is oftentimes called sand- or sea-snipe. This common object of the sea-shore is not, however, a true snipe, but a sand-piper. Moreover, it is distinctly a denizen of the sea-shore, and the snipe is not ; besides, dunlin are habitually gregarious, whereas snipe seldom, or, indeed, never move about and marshal themselves in flocks as do dunlin. Again, the Common Sandpiper (*Tringoides hypoleucus*), so often seen alongside inland trout streams and waters, has come to be commonly designated as "Summer Snipe" by anglers and others. In America the Pectoral Sandpiper (*Tringa maculata*) is termed "Grass Snipe," whilst the Knot (*Tringa canutus*) is called "Robin Snipe," doubtless on account of the reddish-chestnut breast feathers assumed by the bird in the breeding season. Those who meet with or shoot the birds above enumerated in their respective haunts, and are in doubt as to their due classification, may take

the following broad rules to heart for their guidance :—
 (1) The true snipes do not inhabit the bare sand and mudflats of the sea-shore in the same way as dunlin, knot, and the like, but they habitually resort to inland fields and to the fens, bogs and marshes ; whilst (2) the sandpipers named, as also other long-billed shore birds, are usually met with in sight of salt water.

I am aware that some people believe that a fourth species of true snipe is occasionally met with in Great Britain. This is the extremely dark, almost black snipe, known generally as Sabine's Snipe, which apparently was first noticed by the Rev. Charles Doyne, at Portarlinton, in Queen's Co., Ireland, some eighty or more years ago. This singular bird is described by Yarrell as having the upper part of the head, the back of the neck, back, scapulars, wing-coverts, and tertials dusky-brown, each feather varied by narrow transverse bands of pale yellow-brown, which are less numerous on the back than over the wings. The primary quill feathers are dull black, with black shafts, the upper tail-coverts greyish-brown. The tail feathers have their basal half black, and their terminal half chestnut-brown, spotted and barred with black, the two centre feathers having rather more, and the outer feathers rather less of black than the others. The coloration of the plumage on the chin, neck, breast, and all the under parts of the body of Sabine's Snipe is a mixture of dull brown and pale yellow-brown, in alternate bars over the whole surface. The legs and toes are very dark chestnut-brown, while the beak is as in the normal bird. The measurements of Sabine's Snipe do not appreciably differ from those of the Common Snipe. A snipe of such unusual appearance naturally excited the attention

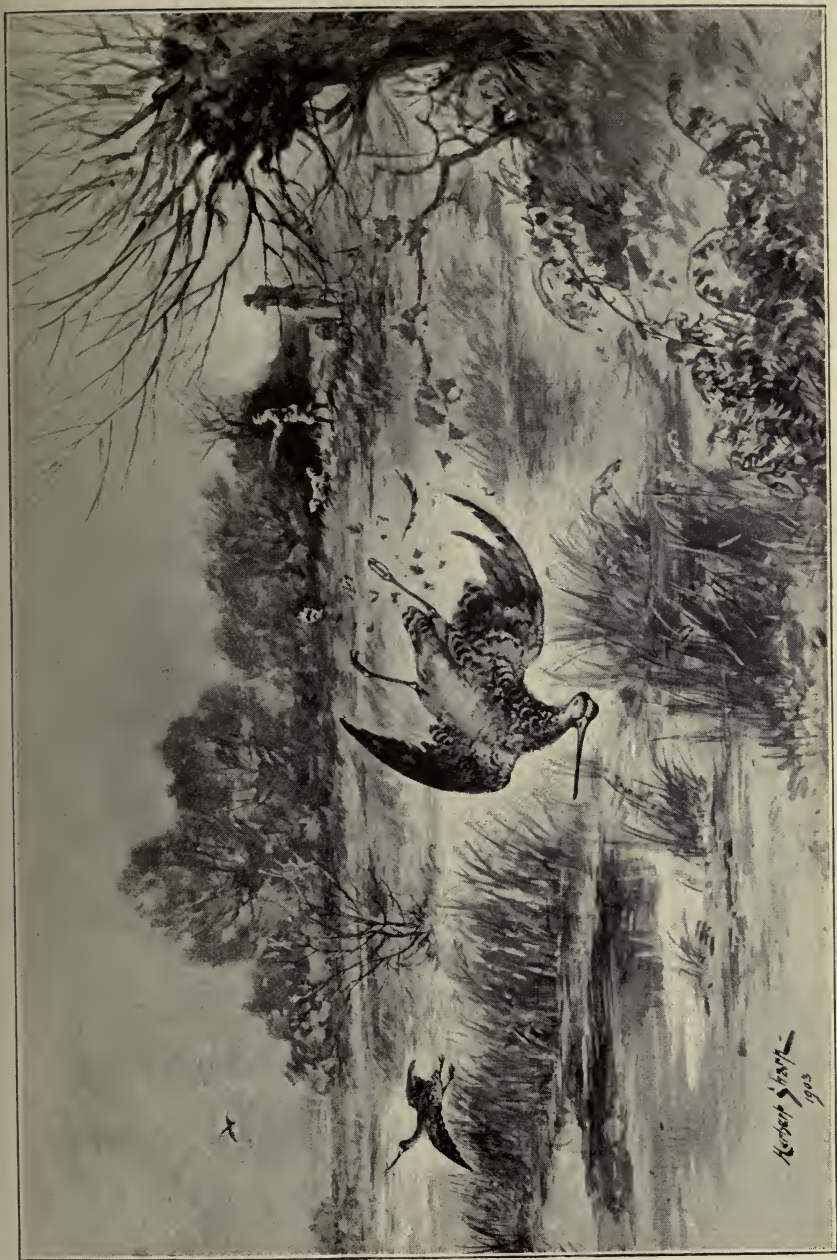
of both sportsman and naturalist, many of whom were inclined to regard the bird as a separate species. The consensus of opinion, however, has lately been in the direction of regarding this bird as neither more nor less than a melanic form of the Common Snipe. Several examples of Sabine's Snipe have occurred from time to time, and Mr. Barrett Hamilton, in reviewing the records of its occurrence in *The Irish Naturalist* for January 1895, stated that out of fifty-five examples of this dark form of snipe now existing in collections, thirty-one were obtained in Ireland, twenty-two in England, one in Scotland, and one in France. I have gone somewhat fully into this question of the Sabine's Snipe, in order to enable the gunner lucky enough to come across a black snipe the more readily to identify his capture, as well, also, to satisfy the minds of any who may still incline to the belief that this bird is a sufficiently good species to rank specifically.

THE GREAT SNIPE. (*Scolopax major*.)

This bird is sometimes called by sportsmen the "woodcock"-snipe, or "double" snipe, by reason of its size. The Great Snipe is just double the weight of the Common Snipe, and in this respect, as well as in that of measurement, its total length being 12 inches, and expanse of wings 19 inches or so, it more nearly approaches the woodcock in the matters of size and weight. The Great Snipe is an annual late-summer visitor to this country; it usually reaches our shores some considerable time before the Common Snipe from over-sea put in their appearance. It is most frequently met with in August and September, and occasionally so late

as the middle of October, whilst, presumably, migrating southward to pass the winter. On its return journey northward in spring, this bird rarely reaches these islands. The Great Snipe is far oftenest shot on the eastern side of the country; only occasionally has it been recorded inland, although sometimes met with as far west as the counties of Cork, Galway, and Mayo, in Ireland.

Whilst generally regarded as a somewhat rare and irregular visitor, it is highly probable that the Great Snipe is frequently overlooked by the unobservant shooting man, or even if regarded as something unusual, it may as often as not be put down as being merely a remarkably fine specimen of the Common Snipe. That painstaking Norfolk ornithologist, the late Mr. Henry Stevenson, gave most explicit directions for the ready identification of the Great Snipe. He has told us that this species is at once distinguishable from the Common Snipe by the under parts of the plumage being barred throughout, the lower parts of the body in the case of *Scolopax media* being pure white. Besides this marked difference, it may be mentioned that the legs are somewhat stouter in the Great Snipe, and bill shorter in proportion to the size of the bird; this bird also has sixteen tail feathers, whereas the Common Snipe has but fourteen. It may, however, be remarked that this number of tail feathers does not appear to be constant, for Mr. E. H. Rodd has placed it on record, in the *Zoologist*, that a Great Snipe killed at Camelford, Cornwall, had eighteen instead of sixteen feathers in its tail. The weight of the Great Snipe usually ranges from $7\frac{1}{2}$ oz. to $8\frac{1}{2}$ oz. Remarkably fine birds sometimes exceed this weight by an ounce or more; the heaviest as yet



ON THE SNIFE MARSH.

placed on record is one shot at Pickering in North Yorkshire; this bird scaled 10 oz., a weight equal to that of some woodcocks. Though never fortunate enough to secure possession of a Great Snipe of my own shooting, I have, nevertheless, met with this bird on some two or three occasions. Once, when partridge shooting in the north of England, my shooting companion, the curate of the parish, on walking through a field of standing beans, a poor, thin, weed-choked crop, flushed and shot a snipe, which, on examination, proved to be a fine example of the Great Snipe. So far as my recollection serves, this particular bird weighed something over 9 oz.

THE COMMON SNIPE. (*Scolopax media*.)

This bird is sometimes called "full" or "single" snipe by sportsmen, the more readily to distinguish it from the Great or "double" snipe already described, as also from the Jack or "half" snipe next to be mentioned. The Common Snipe is not by any means rare as a summer resident in Great Britain. It may frequently be found nesting in swampy localities in England, but breeds far oftener in both Scotland and Ireland, where, as is well known, there are more extensive tracts of ground of suitable character. In former times, snipe bred plentifully in the Fen district; now, however, much of these one-time watery snipe-bogs are smiling cornlands, bearing alternate heavy crops of roots and grain. Thus, perhaps, in that quarter are gone for ever "those good old days" of heavy snipe-bags, plentiful records of which have been left to us by our sporting predecessors.

The Common Snipe does not go to nest quite so early as the woodcock, neither is it so silent when there as is its congener of the woodlands. The peculiar drumming or bleating noise emitted by breeding snipe when on the wing soon conveys the intimation to all at hand that their nesting season has commenced. This characteristic noise has caused the Common Snipe to be known by the name "heather bleater" in Scotland; whilst in Ireland native words are applied to it signifying "air-goat" or "kid of the air"; and it is not a little singular that in the extreme north of Europe the Laplanders similarly term it "ram of the sky." The Common Snipe lays four eggs, which are so large that one wonders how so small a body can cover them sufficiently to successfully hatch them.

Still, all told, our nesting snipe do not contribute largely to the bag of the British snipe-shooter, and were he solely dependent upon home-bred birds as food for his powder and shot, his sport with the long-bills might neither be very brisk nor long sustained. By far the greater part of the snipe-shooting done in this country is obtained with the foreign-bred birds. These begin to arrive in September, the majority of these northern migrants reaching our shores some time during the latter half of October, or about the same time that the larger flights of woodcock come across the North Sea. By that time, in all likelihood, our summer snipe will, in turn, have winged their way south—possibly to provide sport for gunners on Iberian marshes.

During October and November the foreign snipe from Northern Europe come in their thousands to take up quarters on the bogs and marshes of these islands. Those close observers and accurate recorders, Messrs.

Lubbock and Henry Stevenson, have remarked of these migratory snipe that their abundance and their stay are regulated in great measure by the wind and the mildness of the weather. The best seasons, in Eastern England, at all events, are usually those in which moderate easterly or north-easterly gales occur at intervals during the autumn months. Should too long an interval occur without such wind, the snipe, when they do come, frequently arrive in great numbers, but generally depart again in a few days. Snipe have ever been erratic in their movements, and the keenest sportsmen and closest observers of bird life are often exceedingly puzzled by the sudden appearance or disappearance of the snipe in their district. Snipe-shooting, at best, is a lottery. The birds are with us one day and far away on the next day, and all sportsmen of recent experience are fully aware how ill-balanced are the few really good days by all the blank or moderate days of sport falling to the lot of the snipe-shooter.

Snipe in good condition weigh from 4 oz. to $4\frac{1}{2}$ oz. ; they measure from 10 to 11 inches in length, and have a wing-stretch from 17 to 19 inches ; the length of bill of fully-grown birds is close upon 3 inches.

THE JACK SNIPE. (*Scolopax gallinula*.)

This diminutive snipe often goes by the name Judcock amongst sportsmen ; it is merely half the size of the bird last named. The Jack Snipe is a winter visitor to Great Britain, and is usually about the last among the snipe family to reach our shores. It is more unsociable in its habits than its larger congener, the Common Snipe, for it is usually found alone or, rather occasionally,

in pairs. In this matter of unsociableness it therefore more nearly resembles the Great Snipe of solitary fame. As a matter of fact, there are other striking points of resemblance betwixt the Jack Snipe and the Great Snipe—for example, both birds on rising usually move off without emitting any cry, and, moreover, neither bird, as a rule, will fly to any great distance before alighting. The shooting of the Jack Snipe is not very exciting sport, for the bird flies straight, and in the matter of speed falls far behind the Common Snipe; it therefore is not held in any great esteem as a sporting bird. The length measurement of the Jack Snipe is about 8 inches; from tip to tip of wings it measures 14 inches; the ordinary weight ranging from 2 oz. to $2\frac{1}{2}$ oz.



CHAPTER IX

HARE. RABBIT. WILD PIGEONS. ROOK

IN Great Britain we have two species of hare, the common brown hare, *Lepus timidus*, and the Scotch or Mountain hare, *Lepus variabilis*, which last is frequently called blue or white hare from the markedly great seasonal changes in the colour of its coat. In Ireland this mountain hare is the only indigenous species, and there, by reason of the mildness of the climate, it shows less variation of colour as betwixt summer and winter fur, and also attains to greater size, than in Scotland. These two hares differ almost as greatly in habit and in choice of haunt as in appearance. The brown hare is as much an animal of the lowlands as is the Scotch hare an upland creature, the latter merely descending to the lower grounds when hardly pressed for an existence through the rigours of snow or frost.

Slight seasonal variations in the colour of the coat of the brown hare are noticeable in these islands, it being somewhat greyer in winter than in summer. Colour of soil or nature of environment directly influences its colour at any season, for on the dark fenlands, and heavy marshland generally, the hares are usually considerably darker furred than are those resident on the chalk downs or other soil of lighter hue. Albino hares

of this species have occasionally been killed in various parts of the country, as have others with patches of white on face, legs, or body. Hares more or less black in colour have also been met with at rare intervals.

Many shooting men are considerably interested in the weighing of the game they shoot. Some few years ago, in writing to *The Field*, I had occasion to mention the weight of some exceptionally heavy hares. This evoked many replies from widely situate parts of the country. One sportsman, writing from far-away Falmouth, stated that in the whole course of a lengthy career, he had never come across a 10-lb. hare. From Suffolk another sportsman was good enough to send particulars of the weighing of between fifty and sixty hares shot on the previous day. From his remarks I gathered that 9-lb. hares were not by any means infrequent on the heavy land in that particular locality, also that 10-lb. hares were rare. The largest of this batch weighed $9\frac{1}{2}$ lb., eighteen more weighed between 8 lb. and 9 lb. each; twenty-six weighed from 7 lb. to 8 lb. each, whilst twelve only scaled 6 lb. to 7 lb. This weighing took place after a dry season, and these hares were stated to be an unusually good sample, two-thirds of the number being well over the average weight for that quarter. On the other hand, Mr. R. Langford Wilson at that time stated that in the island of Tiree he had shot a number of hares, many of which turned the scale at 11 lb.

Taking the country through, I think that the average weight of brown hares may be put down at from 7 lb. to 8 lb. A 9-lb. hare may be looked upon as unusually fine, and whilst hares weighing 10 lb. to 11 lb. are rarely killed, even this weight does not constitute the record

weight for these animals, some two or three having been chronicled as weighing slightly over 13 lb.

In the weighing of hares it will be of practical interest to note their condition. It has frequently occurred to me to find gravid hares quite late in the year. One year—in 1887, if I recollect aright—I shot several in this state well on into October, or perhaps later. In one northern county in which I have shot a great deal, it is worthy of remark that the brown hares vary much in size and weight. On the hills at an altitude of 500 ft. or 600 ft. the brown hares are usually larger-boned and heavier than are those met with on the low marshland in another section of the county. In winter, too, these upland hares are somewhat lighter-coloured than their brethren of the lowlands bordering on the sea.

As is well known, the Ground Game Act of 1880 gave to the occupier of the land the right to kill hares and rabbits concurrently with his landlord. Naturally, under such conditions there has been a marked diminution in the number of hares throughout the country, and in some quarters hares have been reduced to the point of extermination. This, indeed, is to be regretted, as these animals provide food of high marketable value, and sport of no mean order.

In former years, prior to the passage of this Act, hares formed a much more considerable item in the game returns of many large estates than they can be found to do at the present time. In the season of 1869—1870, not less than 3078 hares were killed on the Wilton estate of the Earl of Pembroke, and hares are far more numerous on those breezy Wiltshire downs at the present day than in many another fair county of England or Scotland. Still, exceptionally good hare

country as it is, the season's kill of hares as recorded on that estate, probably does not now amount to one-third of the proportions obtainable prior to the passing of the Ground Game Act. On the Yorkshire estates of the Earl of Londesborough, where, on the Wolds near Market Weighton, twenty or more years ago, I have seen exceptionally heavy shooting, the bags of this variety of game would compare very favourably, or even exceed, those made in the southern county above-mentioned.

The Hares Preservation Act of 1892 half-heartedly attempts to provide some sort of close time for the over-persecuted hare by enacting that in Great Britain neither hare nor leveret shall be sold or exposed for sale during the months of March, April, May, June, or July. In Ireland stricter protective measures are in force, the Hares Preservation (Ireland) Act of 1879 forbidding the killing or taking of any hare or leveret between the 20th day of April and the 12th day of August in any year, under a penalty of twenty shillings, together with costs of conviction.

Hares commence to breed when a year old; the female generally brings forth one or two young at a birth, the period of gestation being thirty days. As many as five young, commonly known as leverets, are now and again produced, and some females have two or three litters in favourable seasons. Leverets, unlike the young rabbits, are clothed with fur and have their sight from birth. Hares do not pair, and as the males, usually called "jacks," harry the females greatly when the latter are in season, also fighting amongst themselves most strenuously, it is advisable to take all possible steps for the due thinning out of the jack hares at the

end of the shooting season, otherwise this sex will invariably prove to be unduly preponderant. One jack hare to half-a-dozen females will prove amply sufficient for all practical breeding purposes.

The Scotch hare differs from the brown hare in other ways beside that of colour ; it is smaller in size and, as will be gathered from a comparison of illustrations on pages 255, 256, it has shorter ears and a more rabbit-like head than the brown hare. In habits and choice of environment the Scotch hare also differs from its congener of the lowlands ; it exists from choice upon the high moorlands, and in situations there, certainly, the living to be picked up is not by any means so high in character as the ground. The frugal Highland fare of the one and the fat living of the other of these two animals naturally affects both their weight and flavour, and whilst many people boldly assert that, comestibly considered, the Scotch hare is at all times the inferior of the brown hare, others just as freely declare themselves in favour of its somewhat grouse-like flavour. Mountain hares killed in Scotland usually weigh from 5 lb. to 6 lb. ; but heavier animals are occasionally shot exceeding the latter weight by a pound or so ; in Ireland this hare attains to slightly greater proportions, both of size and weight. Intermediate in size between the common hare and the rabbit, the Scotch hare combines in some degree the characteristics of both. In the shortness of its ears and hinder limbs it bears somewhat closer resemblance to the rabbit than to the brown hare, than which it also shows greater tendency to rest under cover of rocks and stones. This, doubtless, is to be accounted for by the presence of the larger predaceous creatures, eagles, foxes, and the like, within its haunts ; the brown hare, however, takes to

ground readily enough when hard pressed, and will then have recourse to some convenient drain-pipe to secure safety from its enemies; it will moreover, if much persecuted, make frequent use of some such shelter.

The rabbit differs in several respects from the brown hare, in both structure and habit. On placing the two rodents side by side the most casual observer cannot fail to notice that the rabbit has much shorter ears and hinder limbs. Moreover, as is well known, the rabbit is a burrowing animal and of gregarious habits, spending a goodly portion of the day underground. This indicates that the hare trusts mainly to its colour, and the rabbit to the shelter of its underground home for safety against numerous enemies. Another important distinction consists in the fact that, as previously remarked, the young rabbit comes into the world sightless and almost naked. Leverets at birth are deposited upon the surface of the ground; but the doe rabbit brings forth her young in a warm underground nest of fine grass and of down plucked from her body. This nest is very frequently situated in a short shallow burrow scratched out for the occasion in some fallow or other cultivated field, in which exposed situation, by the way, the young are too often exposed to the unkind attentions of fox, prowling sheep-dog, or other hungry enemy.

The doe rabbit will commence to breed when it is six months old, and many have about six litters of young, numbering five to eight, in a year; in fact, given mild winters they will continue to breed ten months out of the twelve.

Naturally, in the case of animals so remarkably prolific, it is not a difficult matter to insure a due sufficiency of rabbits for all practical sporting purposes on ground of

suitable nature. On one shooting over which I have had much good sport of variable character, not a rabbit was to be found at one time. As giving sport during the dead winter months, and a pleasing variety to the game-bag at other seasons, it was decided to introduce the rabbit on this ground. Accordingly, some artificial burrows were constructed in two or three suitable situations. These underground shelters were formed by cutting fairly deep and narrow trenches, in which were fixed either rough planks or draining-pipes of suitable size. The trenches were then filled in, and over each system of burrows a cartload of brushwood was thrown to form an additional security against the foxes which were fairly abundant in that locality. Some few couples of wild rabbits were then turned into these burrows, and by such simple means a goodly stock of rabbits was shortly acquired on ground that was entirely new to them. In fact I am well assured that thousands of rabbits have been killed on this particular property in the years which have passed since their introduction. In all cases where it is desired to introduce the rabbit on to new ground, or to secure new blood for the strengthening of existing stocks, it will, I consider, be best to select healthy wild rabbits; that is to say, rabbits untainted by any tame or fancy variety, or by the so-called Belgian hare. The cross-bred rabbits sometimes met with are wanting in hardiness of constitution, and they certainly cannot be compared for sprightliness with the wild-bred rabbit of pure descent, which as food for powder and shot cannot, probably, be improved by alliance with any semi-domesticated strain.

The heaviest wild rabbit I have come across in my own shooting experience weighed 3 lb. 14 oz. This was

one of a remarkably fine lot that was given to me after a few days' sport on gorse-clad hillsides in Wiltshire. Several more of this same lot were almost as good, and certainly with regard to their coats and general healthy plumpness I never saw finer rabbits than these. They were, of course, pure wild rabbits free from cross or strain of any kind, and they were shot in November. The average weight of adult wild rabbits is somewhere about 3 lb., or perhaps a little over, but in some cases exceptionally well-fed rabbits have been shot weighing 4 lb. or more. Some have even been stated to weigh upwards of 5 lb.; most sportsmen of experience will, however, be inclined to regard these monsters with suspicion as being of somewhat doubtful origin with respect to purity of descent.

Although I had frequently seen hares take to water in order to escape from man or dog, I had not seen the rabbit swimming until the autumn of 1897. In October of that year I was with a party of guns shooting hares on an Essex "salting," and in the course of the day I was considerably surprised on disturbing a rabbit from the coarse saline herbage to see it make straight for a wide creek alongside, and on entering the water, without the slightest hesitation, strike out for the opposite shore. It swam with the head well elevated, and cut through the water at good speed.

Of wild pigeons we have in this country four species. Of these it will only be necessary to mention three as being of any concern to the shooter, for the turtledove is merely a summer visitor, and few people will incline to look upon that delicate little pigeon as a medium for sport. Of the rest, then, two are wood-pigeons, the ringdove (*Columba palumbus*) and the stockdove

(*Columba ænas*) ; the third, the rockdove (*Columba livia*), being, as its name implies, a denizen of the cliffs and rocks around our coast. The ringdove is much the largest of this trio of sporting fowl, its total length measurement being some 17 inches, and its weight ranging from a pound to a pound and a half. Stockdove and rockdove approach more closely together in regard to size and weight, each measuring about 14 inches in length and weighing just under a pound as a rule.

The wood-pigeon is with us all the year round, and yet how few sportsmen make any systematic endeavour to obtain a share of that exhilarating form of shooting, which this fine sporting bird can on occasion afford. During the short, dark days of mid-winter sportsmen are frequently at a loss to know how best to spend their time. All sportsmen, some more, some less, are slaves of the weather, and what more dejected body of men can one find anywhere, than a party of fox-hunters penned up for days in some country house waiting for frost to break or snow to vanish? As likely as not the coverts will have been shot through twice—probably thrice; of snipe, too, there may be none; and after several days' shooting at rabbits bolted by ferrets, such proceeding will be voted insufferably slow by the gunner of average energy. Still, those fond of the gun need not—in most well-timbered countries at least—go sportless, as there may then be more or less sport to be obtained with the wood-pigeons. In many situations there is, apart from sport, a strong incentive to wage war upon the voracious ringdove. The daily papers frequently contain accounts of the damage inflicted by countless hordes of wood-pigeons, whole fields of trefoil and clover now and again

being completely devastated by these creatures. Ringdoves have enormous appetites ; the amount of succulent green food in the form of clover-leaves, or turnip-tops, or of more solid matter, such as wheat, barley or other grain, that can be stowed away in their elastic crops must be seen to be thoroughly realized.

In early spring the wood-pigeon is on his very worst behaviour, for if the weather is mild he fairly revels in the springing pastures of young clover and other seeds, picking out the central buds and tender shoots, doing in the course of a few days incalculable harm by greatly retarding the growth of the plant, and thus destroying in great measure the farmer's hope of early pasturage for his sheep. A most careful and painstaking observer of birds and their habits, the late Lord Lilford, has placed it upon record as his deliberate opinion that the wood-pigeon is all but purely detrimental to the farmer, his good deeds being in no way comparable to the damage he inflicts. This being so, there is every incentive to the gunner to secure every available bit of sport with the wood-pigeons, for with each bird added to the bag comes the comforting assurance that an enemy to good husbandry has been despatched. It is, of course, pretty generally known that the ranks of our home-bred wood-pigeons are greatly augmented by the arrival of continental birds during late autumn. The rigours of winter in Northern Europe prove too trying for even the hardy wood-pigeon ; consequently, neither ringdove nor stockdove will remain there, the probability being that many Scandinavian birds find their way to this country. In most seasons, about the end of November or the beginning of December, tens of thousands of wild pigeons

arrive in this country, and about that time it is not an uncommon spectacle to see many acres of land at a stretch literally blued over with these birds. Then on visiting their roosting-places one finds both trees and ground whitened over to such an extent that readier credence can be given to the tales of the early North American settlers respecting the enormous gatherings of the now almost extinct passenger-pigeon which were encountered in the States when that bird was migrating. It may be well to point out that one thing militating against the making of large bags in the pursuit of pigeons is the ceaseless worrying of the birds constantly practised by some people. Of course, where pigeons are doing great damage, the necessity may arise for their constant harassment ; but wherever the shooting of wood-pigeons is conducted on truly sporting principles, the exigencies of most situations demand the giving the birds stated periods of rest in which to regain confidence, otherwise they may be driven away, more or less, from the locality. As in all probability the gunner's winter stock of wood-pigeons will be composed chiefly of foreigners, it must be remembered that these fowl have not that incentive—the homing instinct—to cause them remain in his woods and fields as have birds reared in the district.

Given a windy day in December or January, and the wood-pigeon shooter is certain to have good sport in districts abounding with wood-pigeons. In fact the stormier the weather the better for the bag, provided the shooter is able to make the most of his opportunities, for then the report of the gun becomes of trifling import, and the pigeons fighting their way against a heavy gale are so much occupied as to forget much of their habitual

caution in moving from place to place. Wood-pigeons, too, are much more restless in windy than in calm weather, and are then usually on the move from day-dawn till dusk. Then is the opportunity to make a respectable bag of pigeons, and at such times gunners who are well acquainted with the difficulties of the sport take a peculiar pleasure in bringing down these truly wild and strong-flying fowl. On these occasions the shooter who, whilst standing in, say, a wood of tall firs, or perhaps of oaks, can account for fifty or more wood-pigeons, must be put down as no mean performer with the gun. His bag will, in all probability, be a mixed one, inasmuch as it may be composed of ringdoves and stockdoves, and he who has had much experience in the ways and manner of flight of these wood-fowl is fully alive to the fact that the latter are much less stable objects at which to take aim than their larger and less nimble brethren, the ringdoves. That sportsman must surely be difficult to please who returns not home thoroughly satisfied after making a bag of fifty wood-pigeons amidst such surroundings, for the getting together of a bag of this character calls for as great a display of skill as the killing thrice that number of grouse, pheasants, or partridges under the usual conditions of their pursuit. The largest bags of wood-pigeons of which there is sufficiently authentic record are those made by Lord Walsingham, who on four occasions has succeeded in bringing down to his own gun upwards of one hundred wood-pigeons in one day. The following series are so remarkable that perhaps I may be excused if I again place them on record—

YEAR.	DATE.	NO. OF PIGEONS.	WHERE KILLED.	REMARKS.
1869	Nov. 13	69	Narford	Among beeches
1869	Dec. 29	83	Holkham	Among evergreen oaks in snow
1883	Feb. 14	89	Merton	Coming to feed on a clover layer
1867	Dec. 7	97	„	Over oaks, snow and wind
1869	Dec. 1	102	„	Over beeches in a snowstorm
1886	Dec. 3	121	„	Over oaks
1870	Aug. 12	124	„	Among sheaves of barley at harvest time
1884	Jan. 28	125	„	Over oaks, high wind

It is not improbable that so lengthy and so high a record is altogether unique in the annals of wood-pigeon shooting. Lord Walsingham, too, is accredited with the biggest bag of grouse that has ever fallen to one gun in one day, and the probability is that as much keen pleasure was experienced by him in killing one hundred wood-pigeons as in shooting ten times that number of grouse.

Of a certainty, in addition to the requisite degree of skill in handling the shot-gun, an intimate knowledge of the habits of the birds, their mode of flight, and of wood-craft generally is needed before the shooter is able to lay out a row of wood-pigeons one hundred and twenty strong at the end of his day's shooting.

To the shooting of wood-pigeons in winter, and during the open season generally, game-preservers and owners of coverts will raise few objections, but in the spring and throughout the nesting-season they will most likely be strenuously averse to such practice. In March and April, and again after they have reared their first broods, wood-pigeons are often enough found working a great destruction with the farmer's crops.

Naturally at such a critical season of the year the farmer endeavours to slay and terrorize the marauders; then, what with the popping of blank powder charges, the springing of rattles, or clapping of clappers, and the yelling and ceaseless perambulations of juvenile bird-scarers, the countryside is roused most effectually, with the result that game is scared equally as though an occasional field-day with one or two guns had been organized for the destruction of the wood-pigeons. But this is not all; to make matters worse, the shooting undertaken against the wood-pigeons in spring and summer is invariably effected with 12-bore guns and full charges of both powder and shot. By such method the quietude of the game-covert is often ruthlessly disturbed. This, however, need not be. In the 12-bore with ordinary cartridges we have too much gun and too much powder for this summer shooting, and the desired result can quite well be brought about if some considerable economy in both noise and powder is effected. One of the most pleasing and truly effective miniature fire-arms to use for such shooting as is permissible during spring and summer is, I find, a .410-bore shot-gun. Such gun, probably, with its load consisting of but a pinch each of powder and of shot, may be looked upon by those ignorant of its true properties as being little more than a mere toy. Not so those who have shot with guns of this size, properly bored and constructed, for they are fully alive to the fact that any amount of quiet sport may be had with these small arms when the need exists for thinning out the wood-pigeons or rabbits between the shooting seasons. Loaded with some suitable nitro powder, they make very little noise, and with No. 5 or No. 6 shot will stop pigeon or rabbit at 25 to 30 yards.

It is, perhaps, needless to add that as the killing circle presented by so small a shot-charge is necessarily small, the aim must be correspondingly deadly. In spring and throughout summer, wood-pigeons are usually much more susceptible to the allurements of the decoy than they are during winter. In winter the decoys are chiefly serviceable in enticing pigeons to come up within gun-range, thereby enabling the shooter to obtain shots at moving birds—a highly sporting method of shooting, this, of course. But in spring the wood-pigeons will be found to alight far more readily and unsuspectingly to artistically-displayed decoys, whether these are live or stuffed birds, or dummies made of wood or pasteboard. In March, when, often enough, bitter east winds wither up the springing blades of tender young grass as though they were frost-bitten, and dry up the tilled soil as if it were sun-baked, the farmer is busy putting in his seeds, and hungry wood-pigeons will then effect considerable damage. Although hedge and tree are then as bare as in mid-winter, this need not interfere with the work of extermination, for the annihilator of these farm pests has but to construct a shelter of branches at the foot of some hedgerow tree, or, otherwise, in some suitable spot along the fence, if trees are not, to obtain sport to his heart's content wherever wood-pigeons are plentiful. Here the little .410 bore comes in handy, and with six or eight good decoys fixed up some 16 yds. or 18 yds. away, the concealed sportsman will find himself able to kill every pigeon settling amidst his lures. Then on returning with thirty, forty, or perhaps fifty pigeons at the end of his day's sport, not the least part of his satisfaction will arise from the knowledge that such bag has been secured for the well-nigh irreducible minimum of

powder and shot, as also of noise and fuss likely to disturb game.

Rock-pigeon shooting is an exceedingly difficult form of sport, as frequently followed. I have in my mind's eye some high cliffs on our east coast near to Flamborough Head with a number of guns posted on the top for the purpose of shooting the blue-rocks in their wild fastnesses. From that position the gunner gazes down into space for a depth of 400 ft. to 500 ft., his practice being rendered increasingly difficult by reason of the background of tossing, tumbling water stretched out so far beneath his stand. This form of shooting is, perhaps, scarcely a fair test of the true capabilities of a gunner who has never previously participated in sport of like nature, for the novelty of the situation will, likely as not, put him off his shooting. This rockdove shooting must be considered one of the most difficult forms of sport imaginable for the shot-gun; it will, assuredly, bring into play all the skill and dexterity of which the shooter is possessed. In pigeon-shooting at the Flamborough cliffs I have found that the rockdove and the not less active stockdove are both present, and it is difficult to say which of the two is the more difficult to bring down, each one habitually darting out from the cliffs like a flash and moving off at rare speed. Some of the best game-shots of these times have been known to make but a poor percentage of kills to cartridges expended when engaged upon this sport of rockdove shooting, and this whether shooting downwards from the cliff-tops or upwards from a boat dancing on the tumbling waves.

Whether rook-shooting be regarded as sport or merely as fun, it is certain that the due thinning out

of the superabundant young tenants of the rookeries is neither more nor less than a duty which falls annually upon the shoulders of those having these nesting colonies upon their property. Few would wish to see the rooks thinned down to the point of extermination, far from it. A note of desolation would indeed be struck the moment that Merrie England was divested of its rooks and rookeries. Without a rookery dotted here and there throughout the land our country generally would lack much of its homelike character, whilst all would miss that gladdening sound of returning spring, the cawing of the rooks in the old trees around the village church and country house. Still, in the interests of both sport and agriculture, rook-shooting is a duty not to be lightly disregarded. Some gamekeepers would root out altogether the rooks from the land, they averring that, of all winged creatures, the rook is the worst enemy of all to both eggs and young of partridge and pheasant. This, of course, is an exaggerated view to take, and probably no proprietor would consent to his keeper going to this extreme. One cannot, however, wonder that such extreme views do occasionally find expression, seeing how highly exasperated are some keepers by reason of the devastation to their charges wrought by the rooks. As, for instance, in the case of the head-keeper of a well-known estate in an eastern county, who reported that in 1897 rooks destroyed, in one night only, forty-eight turkeys' eggs, from birds laying in the woods; in the same nesting season these pilferers also abstracted a large number of pheasants' eggs. In the following spring rooks took from this same estate no less than five hundred pheasants' eggs in the short space of a

fortnight; truly, a well-nigh appalling loss for any keeper, and one, by the way, representing, in mere money value alone, some such sum as £25, at least.

East wind and scorching sun in April and May often bind up the ground with a grip as of iron. Then the rook's bill, formidable instrument though it be, cannot penetrate the hard-crusted earth in search of grub, worm, or beetle, and the bird must perforce turn to other things for sustenance. At such times his egg-stealing propensity is much in evidence, and clever indeed will be the keeper who can then prevent loss in this way. One has but to observe the tactics of the old rooks, as they systematically search the fields and fences for nests, in order to realize that these creatures are most arrant egg thieves. The eggshells of grouse, pheasant, partridge, wild-duck, and plover may be picked up by the score on some estates, all having had their contents extracted by rooks. In fact, the damage that can be inflicted by a large colony of rooks is most extensive in character, and must be seen to be fully appreciated.

And yet how few take rook-shooting, duty to the community as it undoubtedly is, at all seriously, or set about it in thoroughly earnest manner. Too often from sheer neglect or positive carelessness the number of young rooks permitted to go at large upon an estate is greatly in excess of all requirements or proper limits. Two of the chief reasons for this probably are assignable to a lack of energy in ascertaining or of fixing upon the exact date or dates upon which shooting should take place, or to the introduction of too much of the fun element and of too many indifferent shots in the proceedings. With regard to the first-named cause, those experienced in the life-history of the rook are aware that

the time of hatching out and consequent readiness for gun or rifle of the young birds is subject to considerable variation. Late wintry or early spring-like weather retards or advances their approach to fitness. Climatic conditions, of course, are largely responsible for the period at which eggs are laid, as also for the rate of growth of the newly-hatched birds, the abundance or scarcity of insect or other soft food regulating in some degree the length of time they take to mature. Therefore it will be seen that rook-shooting fixtures should not, as some suppose, be fixed by calendar, but only after due and careful observation of the process of nesting and of the progress made by the young birds.

With regard to the second reason that has been assigned as the cause of some highly unsatisfactory results obtained in the shooting out of certain rookeries, it may be remarked that an opinion far too generally held is that any one can hit a rook. Acting on this assumption, Tom, Dick, and Harry are often admitted to rook-shootings, to the entire upsetting of order and of the ultimate success of the proceedings. On these occasions one frequently sees men and—without wishing to be ungallant—too often the fairer sex, permitted to handle weapons with whose uses and properties they are more or less totally unfamiliar. Rook-shootings very frequently are family gatherings, and wherever this is the case it is incumbent on paterfamilias to see to it that a fair proportion of good shots and steady sportsmen are invited to leaven the proceedings. Other objectionable features present at some rook-shootings might be mentioned, but perhaps it will suffice to enumerate the following: (*a*) Too much of the rollicking element; (*b*) too much noise and rushing about from place to place; (*c*) too much of

the everybody-for-himself business ; and, consequently, (d) too much bad shooting ; for who can shoot well with the rifle, or even with the shot-gun, after dashing about from tree to tree, as do some greedy shooters in order to secure the pick of the shooting in advance of others of the company ? Those proprietors who can find no sport in the shooting of rooks, neither can extract sufficient fun from the proceedings to induce them to exercise their privileges, might well consider the advisability of letting such shooting, if only to ensure that a due thinning out of the young rooks shall be effected. People who have not much taste for rook-shooting may be unaware as to the extent to which the letting of rookeries is effected in the country. In some districts it is certainly a difficult matter to secure a satisfactory shooting of the sort at any cost. As a consequence, the amounts that are obtained for even the most moderate of rookeries are in some instances rather high. In many cases the rent is fixed on a nest basis ; one shilling per nest is a sum not infrequently paid, but before now takers have been found ready to pay at double this rate—*i.e.* two shillings per nest—for a few hours' fun. On the latter basis £20 would have to be paid for a rookery of 200 nests. Such rookery might yield a bag of from 400 to 600 rooks. If the former number were gathered the lessee would be paying at the rate of one shilling per head for his rooks, whilst if the larger bag were compiled eightpence per head would have been paid for the privilege of killing these birds. Thus it will be seen that as much, or more, may be paid per nest for a rook-shooting than is paid per acre for some partridge-shootings.

In recent years the small-bore rifle has come to be largely adopted for the purpose of killing rooks and also

rabbits during the summer season ; and when used with smokeless powder cartridges very little noise is made in the process, and the rifles are more cleanly and pleasant to use than is the case when black powder is employed. The increased demand for rook-rifles has led to considerable improvement being effected in this class of fire-arm, so that for general precision and accuracy a great advance is observable as compared with the smaller rifles of twenty years back. The modern rook-rifle of .250 in. bore, now so highly popular, is bored and sighted so accurately that a penny postage-stamp or half-crown placed at 50 yards' range may be struck shot by shot. It is plain, however, that even with these arms of precision the rifle-shot used to firing at stationary objects may realize a difficulty in picking off rooks perched on a high branch and swinging in the breeze. The skill and knack required under these and certain other conditions, such as varying range and difficulty in sighting the birds, are what really import excitement and interest into this form of sport. Strictly, the shot-gun should only be used to stop the "fliers," the rifle taking the sitting rooks, or "branchers" as they are termed. The "potting" of sitting rooks with a 12-bore gun and 1½ oz. of No. 6 or No. 5 shot, certainly calls for the display of little skill. Still, to say that there is neither sport nor skill required in the shooting of rooks with the shot-gun would be totally incorrect. The shot-gun, in fact, is a highly necessary adjunct at most rook-shootings, particularly at the later shootings when strong fliers abound. In such situation, with rifle-shots amidst the trees and the guns posted outside the rookery, there will be sport for all. The guns, as likely as not, will have all their work cut out to stop a fair percentage of the young rooks which essay

to break covert and seek safety by flight into the open country beyond. In a breeze the young rooks will be found to travel at quite respectable speed—speed sufficient, perhaps, to fully test the skill of the indifferent shot. Such shooting may also serve to keep in good form the more practised game-shot and keep him from rusting until, once again, the “Twelfth” or the “First” sees him essaying to stop faster-flying game on moor or tumble.



CHAPTER X

WILD-FOWL : SWANS. GEESE

“With mingled sound of horns and bells,
A far-heard clang, the wild geese fly,
Storm-sent from Arctic moors and fells,
Like a great arrow through the sky,
Two dusky lines converged in one,
Chasing the southward-flying sun.”

JOHN GREENLEAF WHITTIER.

FOUR European species of wild swan visit this country in winter : the Mute swan, *Cygnus olor* ; the Polish swan, *C. immutabilis* ; the Whooper, *C. musicus* ; and the Bewick's swan, *C. bewicki*. The first of these is well known as the semi-domesticated swan of our rivers and inland waters, and of course it is quite possible that some of the supposedly wild swans met with by coast-shooters in hard winters are native birds seeking open feeding-grounds, through the freezing up of their inland fresh-water haunts. At the same time it cannot be assumed that all the Mute swans found on the coast and tidal rivers in severe weather are merely escapes, for this bird exists and rears its young in perfectly feral condition in Southern Sweden, Denmark and Northern Germany—in fact, nesting closer to our shores than even the Whooper and Bewick's swans. From point of bill to end of tail a fully adult male

of this species will measure about 5 ft., and in good condition may weigh up to 30 lb.

It is only within comparatively recent times that the Polish swan has been recognized as having characteristics distinct from the Mute swan. In the case of the Polish swan the cygnets are white from hatching, those of the Mute swan being greyish-brown in colour. The Polish swan also differs from our common swan in that the knob at the base of its bill is not nearly so prominent a feature; moreover it has legs and feet of a pale ash-grey or slate colour, those of the Mute swan being black. The *Zoologist* of February 1880 records the fact of a pair of Polish swans having been shot on Wroxham Broad. Both were fully adult, and as they had their wings perfect, it was assumed that they were wild birds. The male weighed 22 lb., and the female 19 lb., the former measuring 5 ft. 2 in., and the latter 5 ft. in length. Some four or five years later an immature female Polish swan was killed at Wramplingham. This bird weighed 15 lb., measuring 4 ft. 8 in. in length, and 7 ft. from tip to tip of its fully-extended wings.

The Whooper—called thus from its loud call-note—is the wild swan proper of the wild-fowler, by whom in certain districts it is familiarly known as Elk, or Whistling swan. Rearing its young in Iceland, and in the north of Norway, Sweden and Russia, this bird visits this country in the winter season, usually in severe weather. It occurs in greatest numbers when driven to seek our more temperate shores through the inclemency of the weather in Northern Europe, and is then generally found to be most plentiful along our eastern seaboard. The old birds of this species have the plumage pure white, with legs and feet dull black; Whooper cygnets

are greyish-brown of feather for the first year, and do not become wholly white until they are aged eighteen months or more. The form and coloration of the head and bill of the Whooper at once serves to distinguish it from the rest of the British swans. It has no basal knob on the bill; the point of the bill, also its upper ridge as far as the nostril cavities, is black; the basal portion is yellow, this colour extending in a >-shaped point up to the eye and in similar formation below the nostrils for some distance towards the point of the bill. In some birds of the year the base of the bill is of paler yellow, and in others it is flesh-coloured. Fully-grown Whoopers measure about 5 ft. in length from point of bill to end of tail, and have a wing-stretch of upwards of 7 ft.; males in good condition weigh 21 lb. or more, females some two or three pounds less.

Bewick's swan is a much smaller bird than the Whooper, for it measures only from 46 in. to 50 in. in length, and weighs but 9 lb. to 13 lb. It is thus little more than half the weight of the big wild swan, and is also some 12 in. shorter in respect of the total length of neck and body. In Bewick's swan the deep yellow on the basal part of the upper mandible is not so extensive, the bill being black from the point up to and beyond the nostrils; in some cases the ridge of the bill is black right up to the frontal feathers. Adult Bewick's swans are pure white of plumage and have black legs and feet. The cygnets are greyish-brown until their second year is well advanced. The note of this bird differs from the loud "whoop-whoop" of the Whooper, sounding more like the word "tong" rapidly uttered. Bewick's swan has generally a more westerly breeding range than the Whooper, and, like the latter, is usually

most plentiful here in severe winters ; it is generally found in greater numbers in Ireland than elsewhere in these islands.

It is possible that two North American species of the genus *Cygnus* occasionally get so far blown out of their course on autumnal immigration southward from Arctic breeding quarters as to touch these islands. These are the Trumpeter swan, *C. buccinator*, and the common American swan, *C. columbianus*. In October 1866 four Trumpeter swans were killed out of a herd of five at Aldeburgh on the Suffolk coast. Of these two swans the Trumpeter is the larger bird, some of which have been measured, showing the enormous wing-stretch of 8 ft., and a length of more than 5 ft.

Wild geese have ever been important objects of the fowler's quest. Time was when this section of our *Anatidæ* numbered less than half-a-dozen members. Colonel Hawker, prince among wild-fowlers, and other sportsmen of the early part of last century, could pretty well enumerate the geese upon the fingers of one hand, thus : Grey-lag, White-fronted, Bean, Bernicle and Brent. Since that period naturalists have been so busy that this short list has at length been extended to about double its former proportions. Some sixty years or so ago, the Pink-footed goose was discovered and added to the British list as an entirely distinct and thoroughly good species. Thirty or more years later the last recorded and truly authentic example of a British-killed Red-breasted goose was secured by Mr. J. E. Harting. This remarkably handsome goose from Northern and Central Asia was shot on the coast of Essex, and thereby all former doubts were set at rest, and this goose's claim to the title of British was thoroughly established.

Some ten or twelve years ago there was killed on the Northumbrian coast the first rightly authenticated specimen of the lesser White-fronted goose, the *Anser erythropus* of Linnæus. Like the rest of the grey geese, the White-fronted goose is subject to great and conflicting variations in size both of body and of bill. As a consequence this species has been subdivided into three forms: 1st, the typical *Anser albifrons*, the common British White-fronted goose; 2nd, *Anser gambeli*, the form met with on the North American continent, and which, Mr. Howard Saunders states, is a considerably larger bird than that last-named and has, besides, a good deal more black on the breast, abdomen, and flanks, also much darker under wing-coverts; 3rd, the *Anser erythropus*, or, as some naturalists prefer to designate it, Dwarf goose, *A. albifrons minutus*, mentioned above as shot by a north-country wild-fowler. This last is mainly characterized by its smaller size, being little larger than a mallard; its plumage, too, is somewhat darker than that of the common type. It has a short, straight-ridged bill, forming a line with the forehead, and fully adult birds have the white-fronted patch of feathers extending over almost the whole anterior half of their heads.

The attention of sportsmen was recently aroused by the statement that another new Bean goose may be added to the British list. Mr. F. W. Frohawk has stated in *The Field* that as hitherto only two species of this group have been recognized as occurring in Great Britain, viz. the Pink-footed goose, *Anser brachyrhynchus*, and the Bean goose, *Anser segetum*, he proposed to add another Bean goose known as *Anser arvensis*, which for general purposes of identification might be termed

Yellow-billed Bean goose. Mr. Frohawk asserts that two quite distinct species have long been confounded under the name *A. segetum*, whereas *A. arvensis* is much the more abundant of the two in Britain. In this connection M. Serge Alphéraky, who is at work on a monograph of the 'Geese of Russia,' remarks: "I am sure that although you have in Great Britain *Anser segetum* as a winter bird, it must with you be a scarce bird, as it is, according to my investigations, everywhere in Europe. I suppose that in general to every hundred *arvensis* there exist in this world but one or two *segetum*. Such is my impression based on a goodly number of skins from different parts of Europe and Asia. I suppose that you will find but very few British-killed specimens of *segetum* in your collections, and that *arvensis* is *par excellence* the Bean goose of your country in winter." Judging by a specimen of this supposed new and smaller Bean goose at large in St. James's Park, London (there were two or more formerly), it appears to me to be somewhat more closely allied to our common Pink-footed goose than to *Anser arvensis*, for it has the bill and other characteristics of the former, in fact might fairly pass for it but for its somewhat dark plumage and the presence of orange on legs and feet and yellow on the bill in place of the normal pink. Still the colour of the plumage of this particular specimen is not altogether a safe guide, for the delicate greys of a Pink-foot's feathers might soon become stained and darkened by London smoke. Moreover, the pink coloration on bill, legs, and feet is not an altogether constant feature with the last-named short-billed grey goose. Mr. Cecil Smith, having bred Pink-footed geese in semi-captivity for many years, has stated that the coloration of bill

and feet is not in their case constant under the influence of partial domestication, but that some of the young occasionally show orange on their legs and bills, others again having pink legs, and pink on the bill, like their parents. It is on record that the Bean and Pink-footed geese have interbred at St. James's Park, and it is possible therefore that the *A. segetum* as discovered by the above-named naturalists, may prove on stricter investigation to be but a cross betwixt *A. arvensis* and *A. brachyrhynchus*, presenting as it does so marked a combination of some important characteristics of the two species.

But this does not quite exhaust the list of geese supposedly new to Great Britain. At a recent meeting of the British Ornithologists' Club, Mr. F. Coburn exhibited a specimen of the south-eastern form of the Grey-lag goose to which the title of *Anser rubrirostris* has been given. This bird was one of five received by the exhibitor from Limerick some time ago. These eastern Grey-lags are larger than our western birds, particularly in the bill and feet, and also have their breast feathers more marked with black.

In the desire to establish ornithological matters on a proper basis, naturalists, these past years, have been keen to differentiate among the various species of our avifauna. Thus it happens that exceedingly nice distinctions have been made and certain families have been divided into various sub-species and local forms. As a consequence all those not well posted up in these slight differences are, likely enough, at times, somewhat puzzled to identify the geese they come across. For those on goose-shooting bent the following table may be of some assistance; it gives the long-recognized

scheme of coloration of the bills, legs, and feet of the typical British Grey geese as an aid to their ready identification—

Name.	Colour of nail of bill.	Colour of rest of bill.	Colour of legs and feet.
Grey-leg. <i>Anser cinereus.</i>	Varies from creamy-white to fleshy-pink.	Flesh-coloured.	Dull flesh-colour; claws, black.
White-fronted. <i>A. albifrons.</i>	White to yellowish-white; in yearlings this is light brown.	Yellow to orange-yellow.	Yellow to orange; claws, whitish horn colour.
Bean. <i>A. segetum.</i>	Black.	Middle portion, orange; base, black.	Orange; claws, black.
Pink-footed. <i>A. brachyrhynchus.</i>	Black.	Middle portion, pink; base, black.	Pink; claws, black.

Any marked departures from this recognized scheme of coloration observed by the British goose-shooter in respect of any of his captures in the way of grey geese, should be immediately reported to some quarter where all doubts could be set at rest—say, for instance, to the Natural History Museum at South Kensington—the likelihood being great that he may have secured one or other of the new geese. In this way valuable assistance might be rendered in deciding the question as to whether certain birds should be accorded specific rank or be classed merely as sub-species or local races.

Of the grey geese the Pink-footed is, in my experience, the commonest species in this country. In East Yorkshire, where I have had much good sport with these geese, I find their movements conducted with great regularity. Year by year they commence to arrive by the 25th of September, almost to the day. They make the sand- or mud-banks of the Upper Humber their nocturnal resting-place and base-line of operations,

thence taking daily flights inland to distances of twenty miles or more to glean the stubbles on the Yorkshire Wolds. Barley is invariably the first grain visited—indeed I am convinced that their predilection for this grain strongly influences them in the selection of their feeding-ground, for I have usually found the scattered grain on the barley-stubbles to be pretty well gleaned up before any other crop is attacked. Their choice next inclines to oats; wheat, in the ear, apparently being looked upon with less favour. No beans are grown upon the light thin soil of these Yorkshire hills. When the supply of scattered grain is about exhausted, or the stubbles have been ploughed in, the geese turn their attention to the succulent blades of the newly-sown wheat or to the young clover. As a rule, the weather at that altitude, 500 ft. or so above mean tidal-level, usually becomes more or less wintry about the middle of December, and then, with the first good covering of snow, the main body of the geese forsake the hills and spend their days upon the lowlands about Goole Level or Thorne Moor; whilst some possibly go to augment the company which has long wintered in North Norfolk.

The question of food supply dominates the movements of these geese more than any consideration of weather. Fluctuations in the quantity of their favourite food may possibly be responsible for variations in the strength of the Yorkshire band of geese in different seasons. In one season there may be thousands, and in another scarcely so many hundreds will be observed. I have at various times seen massed together enormous congregations of Pink-footed geese on the Yorkshire wolds. Their usual habit is to leave the roosting-place at or just before break of day for the feeding-ground, the "gaggles" then

being much smaller and far less noisy than in the evening. On reaching the hills they perchance collect in one big field—the fields there range in size from something like 40 acres up to 100 acres or more—or they may pitch in different places, and on being disturbed by the shepherds and farm-hands during the day, so get united until at night they may be observed making the return journey in one or more huge gaggles. Gaggle is truly a fitting term for one of these flocks of wild geese, which, as observed, are most clamorous on their evening flight, and certainly when heard at a distance their ceaseless pæan proves most pleasing harmony. In that district some years ago, when in company with a friend and the farmer upon whose land we were shooting, I saw a portion of one field literally blued over with these wild geese. We were standing under the shelter of a larch plantation a short distance away, and enjoyed this fascinating sight for a considerable time. We agreed, after some attempt at computation, that there were not less than 3000, but probably nearer 4000 geese in the company.

The Pink-footed geese which habitually resort to the Holkham marshes in North Norfolk, on the estate of the Earl of Leicester, also commence to arrive there at the end of September. These marshes are in reality rich meadows and grazing grounds which an elaborate system of drainage and embankments have recovered from tidal influences. It is an extensive area of grass, without any occupied houses on it; and as the owner allows no molestation of the geese save on a few rare occasions, they, as a natural consequence, acquire confidence and become remarkably tame. The passing of the trains on the railway near does not seem to alarm them, for from

the carriage-windows they have been noticed feeding within a hundred yards of the metals ; when the geese would simply look up at the passing train, and recommence feeding. Once off the Holkham marshes, however, they are wary enough, for they seldom alight on the Wells marshes to the eastward of their sanctuary, as this is free ground, and consequently dangerous for them. From Holkham marsh the great flocks of geese are constantly passing and repassing to the stubbles inland ; their grand sonorous note as they move in immense >-shaped battalions overhead well out of gun-shot is constantly to be heard, and is a pleasing and familiar sound in that district during the autumn months. The geese do not restrict themselves to the Holkham meadows and inland stubbles entirely, for a considerable portion of each day is passed upon the sand-banks which are exposed for miles at low water along that part of the Norfolk coast. On these sands, where the geese huddle together in close groups, preening their feathers, washing themselves, and gabbling to any extent, they are as safe from the punt-gunner as when residing in their summer haunts in the Arctic regions. On winter nights, when wind and tide and moon are favourable, some of the more adventurous gunners of the neighbouring town of Wells dig pits in the sand in order to intercept the geese as they leave the sand-banks on the rising of the tide. For this work a good moon, a spring-tide to entirely cover the sand-banks, and a westerly wind to cause the geese to fly low are needed to ensure success. Although the Holkham geese would appear to be subjected to a good deal of outside persecution at the hands of the gunners and bird-netters of the locality, they manage to come through the

ordeal very well. Col. Feilden has informed me that on an average about one hundred geese are shot and netted by the Wells fowlers during the winter. The greatest destruction amongst the geese is caused by the bird-nets which the fishermen stretch along the sands. In dark nights the geese leave the sand-banks on the rising of the tide and blunder into the nets. In one net 30 yards long, seventeen geese were entangled and caught in one haul. But fortunate it is that such catches as these seldom occur, otherwise the geese would be decimated without yielding any of the excitement and grand sport of which they are capable. I am told this company of geese is from 3000 to 4000 strong, and thus from the information at my disposal, estimating the average yearly bag made by Lord Leicester and his guests at another hundred, it is probable that not more than about 5 per cent. visiting Holkham in any one year are shot. Surely this is a moderate and reasonable toll to take for the protection and food afforded them, for they are not by any means the most desirable guests on rich feeding pastures, as any one will admit on seeing whole acres eaten off close to the ground and soiled by these birds. By the establishment of protected areas such as those at Holkham Park, and at Berkeley Castle in Gloucestershire, as well also at Lilford Hall, and elsewhere, the owners have earned the thanks of sportsman and naturalist alike.

As to the weight of Pink-footed geese: this may be placed at 6 lb. to $6\frac{1}{2}$ lb.; the heaviest of which I have any record was one of $7\frac{3}{4}$ lb. I believe that on one or two occasions I may have shot birds slightly heavier even than this, though no mention of the fact appears in my diary. Of one thing I am certain, that for one Pink-

footed goose weighing over $7\frac{1}{4}$ lb., I have shot many weighing less than $6\frac{1}{2}$ lb., all adult birds. On one occasion I shot a remarkably small goose of this species, which weighed no more than 5 lb. 2 oz. It was a dapper little goose of the sort, in good health and condition, and apparently adult. A Pink-foot of normal size measures about 30 in. in length, and has a wing-spread of 4 ft.

Bean geese are larger birds than those afore-mentioned, and I see that I have shot these up to 8 lb. 6 oz. in weight. Probably this cannot be regarded as the top weight for this goose. I have found that the Bean geese generally incline more to the marshland grasses than to the uplands; they do not take the extended inland flights of their greyer relative last described. This species, apparently, is the common grey goose of Ireland; which fact, perhaps, serves to show that it is more of a marsh- than a stubble-feeder. The plumage of the Bean goose is darker than that of the Pink-footed bird; it also exceeds the length of the latter by some three or four inches.

A North American goose, the Snow goose, *A. hyperboreus*, has visited these islands occasionally. There are two distinct forms, a large and a small race, and the former had not been mentioned as occurring in England until the extremely severe frost of January 1891, when, on the 15th of that month, I was fortunate enough to come across three Snow geese, the incident being recorded in *The Field* newspaper in the ensuing week. Unfortunately I had not a gun in hand at the time, but the birds flew over my house well within gunshot, and by reason of their striking appearance, white plumage and black wing-tips, they could not possibly be mistaken for any other species of wild geese. These birds appeared

very large and swan-like in their order and method of flight, and it is probable that they were the larger of the two forms of Snow geese common to the North American continent.

The Grey-lag goose is now the only representative of its family remaining in these islands throughout the summer, some few still bringing off their young in remote districts in Scotland. Formerly, this goose had stronger claim to be regarded as our common wild goose, for it then bred in the Fen districts ; also, fairly abundantly, in the Carrs of East Yorkshire and, no doubt, elsewhere. Now, however, it is far from being our commonest wild goose ; indeed, my experience causes me to regard it as the one grey goose, among those species usually regarded as common to this country, seldomest met with in England in the shooting season. In the remarkably equable climate of the Outer Hebrides this goose is, I believe, resident throughout the year. On one or two islands of that group I have found the Grey-lag tolerably numerous in winter. I was also recently informed by those of the crofters capable of conversing in English that these geese nest in the heather, and, singular to say, often in close proximity to the hooded crow, the latter being to some extent a ground-nester on those treeless islands.

On the ripening of their scanty patches of oats, the crofters told me that in some situations they were hardly put to it to prevent these great geese from gobbling up the best of the crop ; in daylight and moonlight strict guard had to be kept. The Grey-lag may be identified at some distance by means of the light grey patches on its wings and by its larger size. It is longer and heavier than the rest of the geese, measuring about 33 in. to 35

in. from point of bill to end of tail, and well-fed adult specimens are found to weigh up to 10 lb.

The Bernicle goose, *Bernicla leucopsis*, is a remarkably handsome goose with a short black bill, glossy black head and neck, save for a prominent patch of white on the cheeks, forehead and chin; back beautifully barred with black and lavender-grey, and a good deal of white about the under parts, the legs and feet being black. In these islands it is more of a western than an eastern bird, resorting regularly, and in considerable numbers, each winter, to certain of the western islands of Scotland and some parts of Ireland. The Bernicle goose is fond of the short grass growing in the neighbourhood of salt water; it measures some 25 in. in length, and will weigh up to 5½ lb.

The Brent goose, *Bernicla brenta*, is a more strictly marine species than any of the geese visiting our shores. It is seldom found out of sight of salt water, and, in fact, is rarely detected crossing dry land in its flight. From the punt-gunner's point of view this goose takes rank before all the other geese, and by him it is more familiarly known as black goose. Although some few Brent geese arrive in the north of Scotland late in September or early in October, the main body of the birds does not reach the southern parts of these islands until November. Sportsmen distinguish two forms of Brent geese—the dark and the white-bellied—the latter being much the rarer of the two. Thousands of Brents are distributed in certain localities along our coast-line. In this country they subsist chiefly upon the tape-like fronds of the grass-wrack, *Zostera marina*. This grows in great abundance upon the partially submerged mud-banks in several estuaries and along certain parts of the

open coast, and to a great extent the quantity of these geese visiting any section of the coast is regulated in accordance with the luxuriance or otherwise of this submarine pasturage. One distinguishing mark in the coloration of the Brent goose is a small patch of white on each side of the neck, but in the yearling birds this is absent, or nearly so. Fully-grown birds of the species will measure up to 22 in. in length, and I find that I have shot them weighing upwards of $3\frac{1}{2}$ lb. One killed off the Essex coast weighed 3 lb. $10\frac{1}{2}$ oz., and this must have been a biggish bird compared with others killed about that time, for in my notes the remark is appended that it was a fine and heavy specimen of the dark-bellied form. This goose, however, was weighed on my getting ashore some two or three days after being shot, as I had no scales or weights on board the yacht from which I was shooting. Thus, doubtless, it had lost considerably in weight during that time; if weighed at the time of shooting it would probably have been found to weigh some ounces more. This, however, does not by any means constitute the highest record of weight for this bird, for, according to some authorities, Brent geese weighing $4\frac{1}{2}$ lb. have been killed. The rare and strikingly handsome Red-breasted goose, previously mentioned, is about the same size as the Brent. The Canada goose, *Bernicla canadensis*, is sometimes shot by wild-fowlers in this country, but as these birds are kept on several waters, it is always difficult to say whether birds so obtained are truly wild or not.

CHAPTER XI

DUCKS. PLOVER. SHORE BIRDS

UNDER the comprehensive title of ducks, some five-and-twenty species may be regarded as having claim to the title British. These may be roughly divided into two classes: 1. Those feeding more or less from the surface of the water, and upon land; and, 2. those obtaining much of their food by diving.

In the first division are included: Sheldrake, Mallard, Gadwall, Shoveller, Wigeon, Pintail, and Teal. These ducks provide the bulk of the fowler's sport, and, it may be added, by far the best of it. In the diving class there are: Pochard, Scaup Duck, Tufted Duck, Golden-eye, Long-tailed Duck, also three Eider Ducks and a similar number of Scoters.

THE SURFACE-FEEDING DUCKS.

THE SHELDRAKE or SHELD-DUCK, *Tadorna cornuta*, forms a connecting link between the geese and ducks, as it combines certain of the characteristics of both tribes. This bird has a variety of local names; in certain parts of the country it goes by the name Burrow Duck, from its common habit of nesting in rabbit-burrows; in Essex and elsewhere along the east coast it is called Bar-

gander, *i. e.* barred-gander, from its plumage. In Scotland, it is said, the name "Skeeling Goose" has been applied, but I do not think this term is generally used, although, in South Lincolnshire, I have heard the names Skell-goose and Skell-duck given to this bird. The Sheldrake is a remarkably handsome bird, with a somewhat goose-like carriage; in flight also its measured wing-beats remind one far more of the wild-goose's method of propulsion than of the rapid movements of the wild-duck. With the rest of the surface-feeding ducks the plumage of duck and drake are strikingly dissimilar, but this is not the case with the Sheldrake, as male and female of this species present much the same appearance, the female being rather less bright of colour than her consort, and herein lies another goose-like characteristic. Sheldrakes are about the same weight as Brent geese, that is to say, fine birds weigh $3\frac{3}{4}$ lb., extremely heavy ones sometimes reaching 4 lb. From bill-point to tail-tip the Sheldrake measures 24 in. to 26 in.

THE RUDDY SHELDRAKE, *Tadorna casarca*, from South-eastern Europe and North Africa, has occasionally been shot in this country. It is however a somewhat difficult matter to determine betwixt birds truly wild and those escaped from confinement, the Ruddy Sheldrake being kept on several inland waters in this country. The general scheme of colour in this bird is rufous, or orange-brown, but it has primary and tail-feathers leaden or blackish; wing-shoulders buffy-white, and bronze-green speculum. In spring the male has a black ring around the neck, in winter this is not present. The Ruddy Sheldrake is about the same size as the common species.

THE COMMON WILD-DUCK or MALLARD, *Anas boscas*,

the feral stock whence the domestic duck is derived, was far more numerous formerly than at the present time. This, doubtless, is in great measure to be attributed to the extensive measures undertaken in the way of land drainage and the reclamation of fen and marsh during the past century; this process having enormously reduced the area of the natural feeding-ground of the wild-duck. Some people on reading this statement may be disinclined to accept it as the true reason for the present-day comparative scarcity of these wild-fowl. They, perhaps, will attribute the decrease in numbers to the army of shooters which now takes the field on every available opportunity. But if we consider the huge quantity of wild-ducks formerly captured by the decoy, it will possibly be admitted that the ancient decoyman's methods were at least as deadly as are those of the present-day gunner. A hundred years ago wild-duck by thousands were caught annually in the decoys; Pennant states that at ten decoys near Wainfleet, Lincolnshire, the number of ducks, teal, and wigeon captured in one season reached the enormous total of 31,200. This extensive use of decoys, together with the system of driving the young ducks or "flappers" into nets, practised over wide tracts of marsh, undoubtedly reduced the numbers of the wild-ducks in olden times far more than is the case with all the shooting of the present day.

Now that much-needed protection has been given to wild-fowl in their breeding and moulting seasons by the passing of the Wild Birds' Protection Act, the wild-duck has evinced an increasing tendency towards remaining here throughout the summer. There are many suitable spots to be found around our coasts, also inland, where

the wild-duck would remain to breed had it but the necessary inducement. In the case of this bird the term necessary inducement may be taken to mean perfect quiet at pairing-time. Too often, the few pairs of wild-ducks found visiting some inland pond or mere during February are looked upon as prizes by the local gunner.



MALLARD RISING.

At such time, being remarkably easy to kill, the birds usually fall victims, and thus for ever is destroyed the chance of their populating the vicinity with others of their kind. Increased attention has recently been given by owners and lessees of shooting to the breeding and preservation of wild-ducks. The hand-rearing of wild-ducks is a much less difficult matter than the rearing of pheasants, and were it to become general, the value of

many shootings would be increased by fifty per cent. or more as a result of the introduction of this fine sporting bird. Supplies of wild-ducks' eggs can now readily be obtained from several of the modern game-farms, their price being about half that of pheasants' eggs. In procuring these eggs due care should be exercised in order to secure only those from purely wild stock, as sport will assuredly deteriorate if half-wild breeds are reared. The wild ducklings are extremely hardy, and, as remarked, are comparatively easy to rear. Under natural conditions, the wild-duck is nesting in the south of England in March; further north, in cold and elevated situations, egg-laying is deferred for a fortnight or more. In a state of nature the Mallard is more or less monogamous, but he develops into a polygamist where the sexes are unevenly balanced. The nests are usually placed on the ground, but instances are recorded of ducks nesting in pollard trees at an elevation of 20 ft. or more. The number of eggs runs from eight to ten; considerably more have been found in one nest, but, as in the case of the partridge, where this occurs it is generally considered that two birds have contributed to swell the total. Wild-ducks invariably line their nests with down plucked from their breasts. Such warm protection, however, does not always prevent injury from freezing when the too frequently recurrent March and April frosts are experienced. Members of the crow tribe—hooded, carrion and rook—are yearly responsible for the loss of hundreds of wild-ducks, these birds ravenously devouring both eggs and ducklings. Pike and large eels also take the latter, and these fish should be strenuously kept down where wild-ducks are reared.

The common wild-duck goes to nest earlier than any

of the game-birds proper, and for this reason I would suggest that the inland shooting of the wild-duck should cease on February 1 in each year. To the coast-shooter, whose bag of wild-duck at that season may consist chiefly of foreign-bred birds, this curtailment of the shooting season would prove a hardship. This objection might be met by rendering it permissible to shoot wild-ducks along the coast and tidal rivers, within clearly defined limits, up to March as heretofore.

The wild-duck with us is mainly nocturnal in its choice of feeding-time; it is an omnivorous feeder, grain, grass, potatoes, acorns, insects of many kinds, molluscs and shell-fish; in fact few things, in their season, are discarded by these hungry wild-fowl. In adult males the extent of wings is from 2 ft. 8 in. to 3 ft., their total length about 2 ft., and when well fed they will weigh up to $3\frac{1}{2}$ lb.; the duck is usually about 2 in. shorter in length and some ounces lighter in weight. Old ducks on reaching the period of sterility will assume some of the characteristics of the male in respect of their plumage.

THE GADWALL, *Anas strepera*, appears to be slowly, though none the less surely, on the increase, equally with regard to the numbers visiting this country as of those remaining here to nest. Particularly is this so in East Anglia, in Essex and certain other districts in England. If not so numerous in Scotland, this duck is certainly found in several widely-separated parts of that country, both in the east and the central parts; and, as I know from experience, it is also to be found in the extreme west wintering in the mild climate of the Outer Hebrides. With us the Gadwall appears to prefer fresh water, although it may now and again be found off the coast. It is shy and retiring of habit, and when in the shelter



Herbert Sharp 1903

DUCK FLIGHTING.

of thick reed-beds and the like may occasionally be overlooked by the dogless sportsman, the services of a keen-nosed spaniel often being requisite to flush it. No doubt Gadwalls sometimes remain unidentified by reason of their resemblance to the female of the common wild-duck. However, the white wing-patch of the Gadwall at once sets aside all doubts with those aware of this prominent feature. The male Gadwall will weigh from 2 lb. to close upon $2\frac{1}{2}$ lb.; length, 20 in.; the female is both smaller and lighter.

THE SHOVELLER, *Anas clypeata*, is fairly well distributed throughout these islands, though it can scarcely be termed a common species anywhere. It breeds regularly, in small numbers, in several parts of Great Britain, most frequently in the eastern counties of England, and in Ireland. Though oftenest found upon fresh water, this duck frequently resorts to the muddy creeks and grass-fringed foreshores along the coast. It feeds upon the plant and insect life found in those situations; also upon snails, worms and shrimps, and is excellent as a table bird. The adult male Shoveller in spring plumage is one of the handsomest of our wild-ducks, the head and upper neck being green, breast and fore-back white, wings with shoulders pale slaty-blue and green speculum, and belly rich chestnut; this striking colour effect being heightened by black under tail-coverts, yellow eyes, reddish-orange feet and legs and lead-coloured bill. The female Shoveller is a plain bird in comparison, being soberly clad in brown, much after the manner of the female of the Mallard. Apart from all else, the bill of the Shoveller serves to distinguish it from the other ducks, for it is of considerable length and dilates laterally towards the point into a spoon-like form. This causes the

bird to be known variously by country folk as Spoon-bill, Broad-billed duck, and Shovel-bill. Shovellers measure 20 in. in length, and weigh from $1\frac{1}{2}$ lb. to $1\frac{3}{4}$ lb.

THE WIGEON, *Anas penelope*, is the most abundant of all the sea-going and surface-feeding ducks. Wigeon are found in thousands around our coasts wherever the food and environment are to their liking. They are chiefly marine of habit, but now and again resort to the fresh waters along the coast; comparatively few remain to breed in this country, those doing so are chiefly located in the north of Scotland. These fine sporting fowl commence to arrive from their northern breeding-quarters about the end of September, and by the middle of October thousands will have reached our coasts in most seasons. With favouring winds and severe weather in North Europe the number of these "regulars" may be greatly augmented during November and December. Several east-coast gunners regard the early arrival of the Wigeon as a good omen. In Essex I have heard it frequently asserted that unless these ducks appear in tolerable numbers by Michaelmas Day they will not be plentiful during the ensuing season.

Whilst here, Wigeon are more nocturnal than diurnal feeding duck; they are often to be seen feeding in close proximity to the Brent geese, and eating the same food, the succulent roots and fronds of the grass-wrack. Wigeon are also very fond of the short green grass growing on the mud-banks along the foreshore. Curiously enough, amongst sportsmen, the male and female wigeon are termed cock and hen. The length of this game and hardy duck is about 18 in. or 19 in., and the weight ranges, according to the supply of food, from $1\frac{3}{4}$ lb. to 2 lb. or a little over. Among professional shore-

shooters and fishermen the Wigeon often goes by the name of "Whew" or "Whewer," from the call-note of the cock bird, a shrill and extremely penetrating whistle which in our language is best represented by the compound "Whee-oh" or "Whee-ou." The hen Wigeon has a different call which may be likened to the word "purr." The cock Wigeon has plumage handsomely marked with rich chestnut, green, brown, grey, velvety-black and creamy-white. The hen bird, however, is very



soberly clad with brown on the upper and with whitish feathers on the under parts. The American Wigeon, a larger race, has been met with a few times in the British Islands.

THE PINTAIL, *Anas acuta*, breeds sparingly in Ireland and occasionally in some of the western islands of Scotland. Although a regular winter visitor to the British Islands, it cannot be described as a common species, and with us any large gatherings of Pintail are seldom to be found. In the male Pintail two of the central tail-feathers are considerably longer than the rest, and are sharply pointed ; this, of course,

accounts for its name, as also the appellation "Seapheasant" by which it is known in some quarters. The male Pintail is a graceful bird with finely-marked plumage; in the female brown is the prevailing colour, and this bird has sometimes been confounded with the hen Wigeon by those not well acquainted with the two species. From point of bill to the end of the long tail-feathers an adult male Pintail will measure 28 in.; the female has a tail somewhat longer and more pointed than many of the ducks, but without the elongated central feathers of the male. A Pintail in good condition will weigh as much as $2\frac{3}{4}$ lb.

THE TEAL, *Anas crecca*, is the smallest of our wild-ducks. It is a tolerably familiar species, both as a summer resident and a winter visitor. Teal have always been held in the highest esteem by the wild-fowler as thoroughly game little fowl, that in many situations will tax his skill in handling the shot-gun very severely. Teal are remarkably speedy of flight, they spring from the water like a flash, and few ducks are more difficult to bring down than teal flying singly over the shooter's stand at evening flight-time. The drake Teal is most beautifully plumaged, the female being much more quietly clad in brown. Apart from coloration of plumage Teal have ever been greatly admired by reason of their elegant proportions, dainty trimness, and breezy alertness. This diminutive duck measures only some $14\frac{1}{2}$ in. in length, and weighs up to 14 oz. when thoroughly plump. Teal are excellent for the table. The GARGANEY, *Anas circia*, sometimes called Summer Teal, is rather larger than the Teal but is smaller than the Wigeon. Although occasionally nesting here, this duck is of small concern as a sporting bird, as it does not winter in these islands.

THE DIVING DUCKS.

THE POCHARD, *Fuligula ferina*, whether comestibly or sportingly considered, is quite one of the best of the diving ducks. This duck closely resembles in appearance its near relation, the celebrated Canvas-back Duck of North America, but is somewhat smaller. In Eastern England this duck generally goes by the name of "Dunbird," and in that quarter thousands of these birds were captured in specially-devised flight-ponds in the old decoying days. The Dunbird, being so expert in diving, could generally avoid being driven up the pipe of the ordinary decoy-ponds along with Mallard, Wigeon and Teal, and thus an ingenious arrangement of spring-nets was planned for their capture. Nets of considerable length, and of something like 20 ft. in breadth, were affixed to long poles, the latter being suspended on pivots, and so heavily weighted at their lower ends that when released from a horizontal they instantly assumed a perpendicular position. These nets were placed to suit every direction of wind, and on the firing of a gun the Dunbirds, rising against the wind as all wild-fowl do, would fly into the windward net on that instant sprung to receive them. The force of their impact on the net was so great that the bulk of the fowl dropped straight down into deep and narrow pens, or trenches, from whence they could not rise and were quickly despatched by the fowler. Sometimes so great a weight of birds struck the net that the latter was overborne, heavily-weighted as were the pivoted poles, and on these occasions some of the duck made good their escape over the top of the murderous engine. On a good take being

effected by these means the bottom birds in the pit would be killed and flattened out by the mass of fowl above them.

Some few Pochards nest in this country, but many more come to winter here. At full length this bird measures 19 in. or a little more, and weighs from 2 lb. to 2 lb. 6 oz. The rich chestnut-red head and red eye of the Pochard causes it to be known in some parts as Red-headed or Red-eyed Diver or Pochard.

THE RED-CRESTED POCHARD, *Fuligula rufina*, is a very rare wanderer from South-eastern Europe and Asia that has been obtained about a score times in England. This duck has a very conspicuous crest of rich chestnut, and is considerably larger than our Pochard, as it measures 22 in. in length and weighs a quarter of a pound more.

THE SCAUP DUCK, *Fuligula marila*, is a regular winter visitor to the British Islands. From November onwards through the winter Scaup may be found in thousands on the shoal water off the coast. These thoroughly hardy sea-going fowl are little affected by the hardest winters, as, obtaining their food by diving, they can maintain their condition when the surface-feeding ducks are feeling the pinch very severely. The adult female has a broad strip of white feathers along the base of the bill and a brown head and neck. Birds of the year, male and female, have this white frontal band, but in adult males, as shown in the accompanying illustration, this is absent, the head, neck, and breast being glossy black shaded with green. The Scaup Duck measures 18 in. or 19 in. in length, and sometimes exceeds in weight $2\frac{1}{2}$ lb.

THE TUFTED DUCK, *Fuligula cristata*, breeds in some numbers in Ireland, Scotland, and parts of England; it

is also a regular winter visitor to these islands. The coast-shooter now and again meets with Tufted Ducks in the tidal channels and estuaries, but these fowl apparently prefer the fresh waters, and are commonly found on the lochs and lakes of the north and west. This duck derives its name from the occipital crest which on the adult males is about 3 in. long; in



TUFTED AND SCAUP DUCKS.

females and yearling birds this is not nearly so pronounced a feature. Tufted Ducks have a length of 17 in., and the heaviest birds weigh rather more than $1\frac{3}{4}$ lb.; they are known familiarly as Black and White Divers in many places.

THE GOLDEN-EYE, *Fuligula clangula*, is a winter visitor, and, in the way of sport, is not of much account, for it is one of the wildest of ducks, and, moreover, is of small value when killed. The handsome male of this species

is an object much sought after by ornithological collectors, but fully adult birds are not by any means easy to obtain. In the west of Scotland and elsewhere, I have at different times pursued for hours one or other of the full-plumaged male Golden-eyes met with, and, far oftener than otherwise, without once drawing trigger. This duck is sometimes called Magpie Diver, from its parti-coloured plumage; also Rattle-wings, from the noise made by its rapidly moving wings during flight. Length, about 19 in.; weight, up to $2\frac{1}{4}$ lb., or a little more occasionally.

THE BUFFEL-HEADED DUCK, *Fuligula albeola*, is a North American species obtained very rarely in Great Britain. It is much smaller than the Golden-eye, which it much resembles in appearance. The adult male of the Golden-eye has a white spot at the base of the bill in front of each eye, whereas the Buffel-head has a largish triangular white patch behind the eye. Length, 15 inches; weight, about a pound.

THE LONG-TAILED DUCK, *Fuligula glacialis*, is a winter visitor, chiefly to the northern parts of the kingdom. I have frequently seen this duck on the Scottish coast, particularly in the Outer Hebrides, but have not as yet seen it on the east or south coasts of England. It is an extremely hardy sea-going fowl, and appears to delight in swimming on the long swelling waves of the Atlantic. The adult male Long-tailed Duck has very handsome and varied plumage, with elongated tail-feathers sometimes extending to 8 in. or 9 in. In the north this bird frequently goes by the name "Calloo," from the loud musical cry of the drake. Length from point of bill to tip of tail, 26 in.; weight, $1\frac{1}{2}$ lb. to $1\frac{3}{4}$ lb.

THE HARLEQUIN DUCK, *Fuligula histrionica*, so called

from the singularly handsome and varied plumage of the drake, has been met with very rarely in these islands. This is rather remarkable seeing that the species is resident in Iceland. Length, 17 in., or about the same size as the Tufted Duck.

THE EIDER DUCK, *Somateria mollissima*, is rarely met with in England south of the Yorkshire coast. Only on one occasion have I seen this bird in South-eastern England, and that was off Canvey Island in the Thames estuary, where I shot a duck of this species in the autumn of 1895. Farther north Eiders are common enough ; they are however essentially sea-going fowl and are of little value to the sportsman. Length, 26 in. ; weight, sometimes exceeding $5\frac{1}{2}$ lb. The KING EIDER, *Somateria spectabilis*, and STELLER'S EIDER, *Somateria dispar*, are rare visitors to our islands, the former having been obtained on some fifteen occasions and the latter merely twice.

THE COMMON SCOTER, *Oidemia nigra*. Thousands of these black ducks are to be found off the eastern seaboard of England in winter. I have seen them blackening the sea on the shallows off the Essex coast, but few people save the novice ever think of going after them, as they are of little account either as sport-providers or for the table. Length, 19 in. ; weight, about $2\frac{3}{4}$ lb.

THE VELVET SCOTER, *Oidemia fusca*, with us, is much rarer than the bird last mentioned. The Velvet Scoter is easily known by the conspicuous white bar across the wings. Length, 22 in. ; weight of the male about 4 lb., of the female a pound or so less.

THE SURF SCOTER, *Oidemia perspicillata*, is a wanderer from North America that has been met with in these islands only a score times or so. As in the case of the

other Scoters, the body of this duck is black, but it may be readily distinguished from them by two oval patches of white on the top of the head and back of the neck. Length, 21 in. ; weight, about $2\frac{1}{2}$ lb.



THE PLOVERS

Of the plover tribe only some three species are of much concern to the sportsman of this country. These are the Golden and Grey Plovers, and the Lapwing or Green Plover.

THE GOLDEN PLOVER, *Charadrius pluvialis*, is held in high esteem both for the sport it affords, and for its excellence for the table. Golden Plover nest in considerable numbers on the moorlands of England, Scotland, and Ireland. In autumn, thousands come over from their breeding-haunts in Northern Europe to pass the greater part of the winter in Great Britain or in Ireland. The plumage of the Golden Plover being closely spotted over with golden-yellow has given to the bird its familiar title. Golden Plover frequent the arable

and pasture fields on the uplands as well as the low marshlands. Frost or deep snow renders their food unprocurable in such situation, and in wintry weather they may for a time frequent the mud-banks along the coast, but many of them will depart to some more temperate climate, returning on the break-up of the frost. In spring the throat and breast feathers of the male Golden Plover are jet black ; in winter these parts are white or dusky white speckled with dull yellow. Length, 11 in. ; very fat birds weigh 10 oz., or more.

THE GREY PLOVER, *Squatarola helvetica*, bears, in respect of plumage, some resemblance to the bird last described. Placed side by side, however, the two cannot well be confounded, for the Grey Plover is distinctly whitish- or silvery-grey, and has, moreover, a hind toe which the Golden Plover does not possess. In flight the Grey Plover may also be distinguished by the colour of the axillary plumes below the wings, these being black in both young and old birds, whereas in the Golden Plover they are white. Grey Plover are not so gregarious of habit, neither so numerous in this country as are Golden Plover. They are altogether birds of the shore, and have never been known to nest in these islands. In some districts they go by the name of Silver Plover ; in the Wash district I have frequently heard them called Sand Plover. Length, 12 in., and weight about that of the Golden Plover.

THE LAPWING or GREEN PLOVER, *Vanellus cristatus*, is quite familiar to most country residents. It is this bird which lays the plovers' eggs so highly prized by the gourmet. This causes it to be a much-persecuted bird, for in the spring the eggs are taken by thousands, and in autumn and winter the birds themselves are both netted

and shot to a considerable extent. Length, about $12\frac{1}{2}$ in.; weight and size of body much the same as that of its golden relative.

SHORE BIRDS.

Most important and largest amongst these is the CURLEW, *Numenius arquata*. The Curlew is a fine bird, and well worthy of the kind attentions of the coast-shooter. Many curlews nest on the elevated moorlands in the west and north of these islands, and these home birds begin to make their way down to the mud-banks and saltings around the coast in August, where, with the home-bred ducks, they form the principal objects of pursuit for the shore-shooting fraternity during the opening weeks of the shooting season. About mid-October the foreign-bred curlew arrive and take up their quarters for the winter. A young curlew is excellent eating. Curlews vary much in size and length of bill, some fully-grown birds measuring but 21 in., whilst others exceed 26 in. in total length. A fair average weight is about $1\frac{3}{4}$ lb., but I have shot curlew weighing as much as $2\frac{1}{2}$ lb. The ESKIMO CURLEW, *Numenius borealis*, has been killed in these islands on rare occasions. It is a North American species and is much smaller than our curlew, measuring only some 14 in. in length; being, in fact, a smaller bird than our Whimbrel.

THE WHIMBREL, *Numenius phæopus*, closely resembles the Curlew in all but size. In South Lincolnshire a common name for this bird is "Curlew Jack," or "Half Curlew." This is the bird so frequently observed flying across the country, often at considerable height, when on

its northward spring migration ; this has led country-folk to style it "Maybird," its loud trilling whistle then frequently attracting attention. Length, 16 in. to 18 in.; weight, from $\frac{3}{4}$ lb. to 1 lb.

THE BAR-TAILED GODWIT, *Limosa rufa*, is to be met with in this country only whilst migrating to or from its northern breeding quarters in spring and autumn. Young birds begin to arrive in August, and then onward through the autumn the species is fairly numerous until hard weather commences, when the bulk of these birds depart southward, returning about May on their passage north. I have found these Godwit extremely numerous at times on the Essex coast ; they are known as "Preen" by the local gunners, and as they congregate thickly on the mud-banks, an occasional heavy kill is scored with the punt-gun upon these fowl. The bill of the Bar-tailed Godwit has not a downward curve like that of the Curlew, it is nearly straight with an upward inclination and is close upon 4 in. long. In length this bird ranges from 14 in. to 16 in., and in weight from 12 oz. to 14 oz.

THE BLACK-TAILED GODWIT, *Limosa ægrocephala*, like its congener last named, is known here only on migration. Early in last century this bird bred in the Fen district, but, like many another marsh-frequenting species, was driven therefrom by the reclamation and cultivation of its favourite haunts. The Black-tailed is larger than the Bar-tailed Godwit, and it is a much less frequent visitor to our coasts. Length, 16 in. or 17 in.; weight, $\frac{3}{4}$ lb. to 1 lb.

THE GREENSHANK, *Totanus canescens*, is frequently found on the salt marshes along the east coast of England

and elsewhere, quite early in August, but they do not as a rule winter in these islands, save occasionally in the milder climate of the west of Ireland and Scotland. A few nest in Scotland. The bill of the Greenshank is nearly 2 in. long and is slightly upturned. Total length, 12 in. to 14 in. ; weight in good condition, 10 oz.

THE REDSHANK, *Totanus calidris*, is one of the commonest of our shore birds and at the same time one of the noisiest. This bird is the self-constituted watchman of the shore, as, apparently, his one aim in life is to warn all other fowl of the approach of a possible enemy. Many chances have I had destroyed by the Redshank's piercing call just as I was nearing the end of some arduous stalk after duck or curlew. The Redshank still nests in many suitable situations in these islands. Length, 11 in. ; weight, up to 6 oz.

THE SPOTTED REDSHANK, *Totanus fuscus*, is a rather rare visitor to these islands on its autumn and spring migrations. In spring it presents a very black appearance, but in autumn does not differ much in respect of plumage from the Common Redshank. It is however a larger and longer-legged bird than the latter. I have shot several of these large Redshanks in East Yorkshire in October, and it is just possible that from their general resemblance to the common species at that time of year, they may frequently be overlooked by those not keenly alive to matters ornithological. Length, rather more than 1 ft. ; weight, up to 7 oz.

THE RUFF, *Machetes pugnax*, female REEVE, was a plentiful nesting species in the Fen-lands of olden time ; now it is extremely doubtful whether a single pair of these birds can be found breeding there. The Ruff is

polygamous, and in spring assumes a remarkable collar or ruff of feathers, which is singularly inconstant in colour, two birds seldom being found alike in this respect. These birds are capital eating, and more than one hundred years ago they were netted by hundreds in the Fen country, both in spring and autumn, and fattened up for the table. Doubtless this constant persecution and drain upon their numbers has led to the present scarcity of these birds. Length of Ruff, about $12\frac{1}{2}$ in.; the Reeve is some 2 in. shorter; weight of the former is about 6 oz. in its wild unfattened condition; the Reeve weighs one-third less.

THE KNOT, *Tringa canutus*, is said to have been a favourite dish of King Canute more than eight centuries ago, hence its name. From the later weeks of summer onwards through the autumn, Knot are frequently to be met with in hundreds along our eastern seaboard and elsewhere in suitable situations in these islands. They are fine birds, and consequently are a good deal sought after by the market shooters. In the Wash district of Lincolnshire, where they are plentiful, I have heard them commonly styled "Plover-Knot." Length, 10 in.; weight reaching 6 oz. in birds of good condition.

THE DUNLIN, *Tringa alpina*, one of the least and also the commonest of our shore birds. It is miscalled, variously, sand- and sea-snipe; in Essex it goes by the name Ox-bird, and further north is termed Stint. From August throughout the autumn vast gatherings of Dunlin, thousands strong sometimes, may be observed wheeling and circling over the sand or mud-flats along the coast. From the ease with which they may be approached, and the constant practice they afford, these

are the fowl usually selected by the novice in wild-fowling for the trial of his apprentice hand. Length, about 8 in., and weight 2 oz.

THE TURNSTONE, *Streptilas interpres*, as well as the birds next to be mentioned, properly belong to the Plover family, but being shore-frequenters, they are brought under the heading "shore birds." This bird is well named from its habit of overturning stones and shells in search of the small marine life taking shelter beneath them. The strongly contrasted colours of its plumage render it easy of recognition at some considerable distance. The Turnstone appears along our shores in greatest numbers during the last weeks of summer and the first weeks of autumn. I have frequently observed this bird in early August on the east coast of England. Length, $9\frac{1}{2}$ in.; weight, from 5 oz. to 6 oz.

THE RINGED PLOVER, *Charadrius hiaticula*, nests in certain suitable situations along our east coast and elsewhere in this country. It is a bird of handsome and strongly-marked plumage, and in autumn is frequently met with in company with the Dunlin. Length, $7\frac{3}{4}$ in.; weight, up to $2\frac{1}{2}$ oz. The LESSER RINGED PLOVER, *Charadrius minor*, rarely occurs in this country. The delicate KENTISH PLOVER, *Charadrius cantianus*, although breeding sparingly in South-eastern England, is also a comparatively rare species. The two latter are the smallest of our Plover family, neither measuring 7 in. in length.

THE OYSTERCATCHER, *Hæmatopus ostralegus*, is a familiar object on many parts of our coast both in the nesting season and during autumn and winter. It is

often called "Sea-pie" from its black and white plumage, and is a handsome bird with an orange-coloured bill 3 in. long. It is not good eating, and in consequence is little sought after. Length, 16 in. or more, and weight about 20 oz.



SECTION III

GAME SHOOTING

CHAPTER XII

GROUSE. PHEASANT. PARTRIDGE

MODERN gunners in pursuit of the red grouse usually follow one of two clearly defined methods. One is the old-time plan of shooting over dogs, and the other the more recently devised system known as driving. Briefly, there is a vast difference between the two, for in dogging the shooter approaches the concealed game, whilst in driving the game approaches the concealed shooter, a complete reversal of procedure.

Sportsmen who derive pleasure from the companionship and the working of good pointers and setters are, happily, as yet inextinct, and who shall say they are not at heart the truest sportsmen? In any case they certainly derive more of quiet enjoyment from the quest of their game and in observing the movements of their clever dogs, than falls to the lot of the gunner whose chief pleasure in the shooting of driven game springs from the exercise of that enhanced degree of skill which is called for in that particular branch of sport. In fact, it may be remarked, the pleasures derivable from the two forms of sport, the shooting over dogs and the

shooting of driven game, are as totally dissimilar as are these two sports distinct of nature. In one there is calm, leisurely enjoyment ; in the other keen, one might almost say fierce, excitement.

True, driving has its moments of quiet pleasure, those chiefly of anticipation and of consummation. The anticipatory pleasure comes when, safely ensconced behind the butt, the shooter watches with calm expectancy the efforts made by the distant line of beaters on his behalf. The consummatory delights come last of all, as, with hopes and fears allayed, he sees to the gathering and counting of his slain.

But the chief pleasure in driving is, of course, that period just precedent to the arrival of the birds within gun-range, as also during their passage over the line of guns. Most sportsmen having tasted to the full the keen delights of grouse or partridge drive, will concur that but few moments such as these form ample compensation for all periods of enforced inactivity between the drives.

In the early drives of the season, with the bulk of the birds unaccustomed to the strategic movements of the driver or the arts and attentions of the concealed gunner, the sport is scarcely so wild or exciting as in, say, October, when keenly-alert and strong-flying grouse whirl over the line of guns in several more or less connected packs. In such case the birds move at high speed, and the gunner is well aware that he must display corresponding celerity of movement in the handling of his guns. Moreover the fullest measure of his opportunities must then be seized upon, as in all likelihood the grouse that have once passed his butt will be seen no more that day.

Those ignorant of the sport of shooting driven game have before now spoken slightly of it. But let no one fall into the error of imagining that it is easy work; sportsmen expert in the matter of shooting game over dogs have been known to fail ignominiously on first essaying to shoot driven game. As a matter of fact, in driving there is greater call for the display of skill in handling the gun, of self-control during a period of intense excitement, and of calm judgment in selecting the proper object at which to fire, as also in estimating pace and distance. Driven birds have one great advantage over birds rising before the shooter; they have the advantage of a flying start, which not only enables them to move at the highest rate of speed of which they are capable, but to swerve from their course with greatest rapidity, and thereby to render the gunner's task of hitting them far more difficult.

A rather curious anomaly in connection with grouse-driving is the fact that heavier stocks of birds are generally permissible on those moors where driving is followed than on those where the walking-up or dogging system is solely pursued. This is usually accounted for by the fact that as in driving the oldest and wariest grouse first take to flight at the approach of the line of beaters, they, naturally, are the first to be shot down on reaching the guns. In this way the younger and more vigorous birds are left upon the moor for breeding purposes.

The practice of driving is now gradually being extended in Scotland, where formerly it met with the greatest amount of opposition from many keepers and some lairds. On those moors, notably those of Caithness, where grouse lie well to dogs throughout the



A GROUSE DRIVE.

season, driving is not followed. Elsewhere, given suitable driving ground, and a sufficient supply of beaters at hand, the shooting of driven grouse must become fairly general. In the case of some outlying moors, a standing difficulty is the supply of beaters. In certain districts the scarcity in this respect precludes all possibility of driving save by the aid of imported hands. In other scantily-populated parts the beaters' wages rule very high, 5s. per day, with lunch and whisky, being sometimes paid for the services of none too efficient helps.

Fifty years ago good grouse-moors of 5000 or 6000 acres were to be rented in Scotland for £50 or £60; now, possibly, for the same extent of ground a rent of ten times that amount will have to be paid. The latter sums, however, include a good lodge or shooting-box, similar conveniences being too often non-existent in former days. It is some time since grouse-shootings came to be appraised at £1 per brace; now they are often considered to be worth half as much more, and even at this high figure moors capable of yielding good bags of these birds are none too easily procured.

In Ireland, for obvious and all-sufficient reasons, much available moorland is of microscopic value as compared with the grouse-moors of England and Scotland. In that country the absence of the systematic preservation of game, and the consequent prevalence of poaching, is greatly responsible for the fact of half-a-million acres of otherwise productive moors going altogether unlet, or if let, then often at prices ruling under threepence per acre. Undoubtedly, the due suppression of poaching and systematic preservation of the red grouse would cause Irish sporting properties to advance greatly in value,

and the sooner the poorer resident population come to realize this the better will it be for them and for all interested in the well-being of Ireland. The stream of gold poured into Scotland each year by the community of sportsmen throughout the length and breadth of the land benefits all classes, and Scotsmen are wise in seeing to it that by no diminution of care or attention on their part shall this golden flood be stemmed; would that Irishmen might soon follow the example set by their Scottish brethren.

On first attempting to shoot strong cock capercaillie, sportsmen should remember that these birds move at considerable velocity when well on the wing. Those inexperienced in the ways of the "king of grouse" have been known to be considerably chagrined on missing seemingly easy shots taken at these birds sailing along past them in the open. Possibly the old precept regarding the unwisdom of under-rating an enemy might here be taken to heart, the tendency of most novices in the shooting of capers being to under-estimate the speed of their quarry. Then again, in judging the speed of flight of birds, sportsmen, possibly, are too disposed to take the amount of fuss and noise as, in some degree, indicative of velocity, thus in a general way to assume that the greater the noise the greater the speed. With respect to the bird under discussion such assumption will be more than likely to lead them into error, for it is remarkable that whilst both even and rapid, the flight of the capercaillie is comparatively noiseless.

With regard to the shooting of black game I would say, that from the thoroughly sporting and humane point of view, August 20 is a somewhat too early date for the commencement of the black game shooting season. By

that date, as a rule, the majority of the birds are not in shootable condition; moreover, from their skulking habits and general reluctance to take to flight they afford but tame sport for the gun. Sportsmen, therefore, usually defer the following of these game-birds until some time after the legal opening day, preferring to give both old and young time to gather strength, the former after moulting, and the latter on acquiring the power of flight. About October comes the full reward of these patient sportsmen, for by that time blackcock are strong on the wing, and, in the case of adult birds more particularly, handsome of feather. At the latter season they afford fine sport, the celerity of their movements on the wing oftentimes calling for the gunner's best display of skill to bring them down.

It is highly probable that were the close-time for black game extended to September 1, much better accounts would be heard respecting their status in many a northern county. It might even be well to still further defer the opening date of shooting, as certainly many young black grouse are not properly matured, either as regards growth of body or of plumage, until the season now accorded for shooting has run a month of its course. The gain in respect of condition of the later-killed birds is only equalled by the increased excellence of the sport they afford for the gun. The shooting of immature young or of tail-less old cocks rising laboriously from the brackens in August is not at all comparable as a sport with the killing of full-plumaged birds as they tear along on a breezy day in October, or upon a crisp frosty morning in early December. I think few gunners of experience would grumble if a full month were taken from the beginning of the black game

shooting season, and permission were, instead, accorded for shooting up to the close of the year. This might long delay or altogether prevent the total loss of this fast-vanishing game-bird.

Pheasant-shooting as now generally practised is quite another sport from that followed a generation or two ago. In our grandfathers' time the first of October was a date eagerly anticipated, and on that day pheasant-shooters were early astir beating out the hedgerows and coverts all thickly decked with foliage and furnished with densest undergrowth. Then the spaniel proved an invaluable ally, and the kind of shooting presenting itself, especially in the open, was of the easiest description. Pheasants rising from a hedgerow or out of brackens and briars, where there is little timber to obstruct the view, present the simplest of shots. This particular form of sport might with propriety be termed pheasant-hunting, for herein are centred the chiefest and most exciting elements of the chase—the scenting, chasing, and capturing of an animal through the instrumentality of man, dog, and gun. It is just this zest which gives spice to the whole proceeding, otherwise it would prove a tame affair indeed beside other sports that may be mentioned.

Those who have entered into the fun and excitement of chasing strong-running old cock pheasants through thick undergrowth, causing them to rise within-gun shot, know fully well all that this implies. Compared with the shooting of hen pheasants rising tamely at one's feet, it is sport in truth. Some sixty or seventy years ago, one of the keenest and most hard-working sportsmen that England ever knew, Colonel Peter Hawker, made the following entry in his diary :—"Breakfasted by

candlelight, walked hard all day in a deluge of rain, bagged three cock pheasants; gloriously out-manœuvred all the other shooters; came home very satisfied, and dined off one of the birds." If this is not pheasant-hunting, what else, may I ask, ought it to be called?

Far different conditions from those above cited hold good as with regard to the general run of the best pheasant-shooting at this period. In these times the shooting of pheasants is an altogether different sport, for, in the first place, the month of October has usually run its course before the shooting of these fine game-birds is seriously entered upon. In the Sandringham coverts, for instance, it is an unwritten law that pheasant-shooting is not indulged in prior to the King's birthday, which, as all Britons are aware, is on November the 9th. In many other well-stocked coverts in this country November is well advanced, or in some cases, even, December may have arrived before the pheasants are tackled in right good earnest.

Then, too, the sport itself has entered upon quite another phase, the shooting being entirely dissimilar in character and, be it said, usually of a far more difficult nature than the pheasant-shooting of olden times. In this difficulty alone lies the chief charm and excitement of modern pheasant-shooting. Under ordinary conditions it has been proved that a cock pheasant, once fairly under way, will travel at the rate of upwards of forty miles per hour. With the assistance of the wind this velocity may possibly be increased to fifty or even to sixty miles an hour when half a gale is blowing over the tall tree-tops. Therefore, to effectually stop a bird moving high overhead at a velocity equalled only by the fastest express trains, or about a mile a minute, is, of a

certainty, no mean test of a man's ability to handle the shot-gun. Those who first essay to perform this feat will probably be the first to admit the truth of this assertion.

It has been the fashion among a certain section of writers for the Press to throw derision upon the modern system of shooting pheasants. These writers have likened this shooting to the shooting of farmyard fowls, the killing of which with the shot-gun is but slaughter, calling for neither skill nor endurance on the part of the shooter. Such ideas, of course, are the outcome of ignorance, a certain and effective cure for which would be the placing of those holding such notions outside a pheasant wood where, with a penalty attached to the missing of each pheasant with the two barrels of their shot-gun, they would, I fancy, be most quickly convinced of the fallacy of their belief.

The average villager knows far better than this now-a-days, and he, at least, can shrewdly appraise the value of the work done by the guns as he assists the keepers in driving the pheasants high up over the deadly line. Then it is that one may casually overhear quaint and pithy remarks uttered by the beaters among themselves as they assess each gunner's merits. Opinions such as the following, overheard in a north-country covert, "Didst tha' see — a-swipin' on 'em doon, Bill?" "Aye, mun, but that there gent in that yaller suit he be a-beatin' on him," may often lead to long and heated arguments, so keen is the partisanship oftentimes displayed by beaters in respect of their favourite shots.

Under the modern system of hand-rearing, pheasants have vastly increased throughout the country generally; and it probably is not too much to say that in many

places where but one bird might be killed formerly, fifty or more may be shot without difficulty at the present day. Pheasant-shooting has been described by some whose views, by the way, are strangely warped or unenlightened, as being a selfish sport, a sport of the few. But, surely, very little first-hand inquiry into the economics and general conduct of pheasant-rearing and shooting would serve to convince that few field-sports in England, or for that matter in any country, confer greater benefits upon the community at large. Truly, the pheasant, from egg-shell to dining-table, proves a continuous source of revenue to a considerable section of the populace. First, we have a large body of keepers and casual hands employed in the protection, gathering, and setting of the eggs, and in the rearing of the young birds. Then when the shooting comes on, at a season when work in the country is at its lowest ebb, you have only to look towards the village shop and the cottage hearth to learn what an amount of happiness, good coin of the realm, and of good cheer the week's covert-shooting on the adjoining estate has brought in its train. Next, look at the busy workshops in London, Birmingham, and elsewhere in the provinces, where hundreds of hands are constantly employed in the manufacture of guns, cartridges, and the rest of the shooter's accoutrements. Look at those towering chimney-like structures by the Thames side, in Derby and in Newcastle, employed for the manufacture of lead shot; also at those factories dotted here and there throughout the country, and which are employed solely in the production, by British brains and British labour, of those skilfully-devised nitro-compounds that have proved themselves second to none in the universe. This does not by any means exhaust the

list, but enough has been said to show that the pheasant, as also our other game-birds, are responsible for many and exceeding great benefits that are annually showered upon the community at large. It has been said respecting the shooting of a pheasant that, "Up goes a guinea, bang goes a penny, and down comes half-a-crown!" There is much truth in this, and those who concede this must acknowledge that the accusation as to pheasant-shooting being a selfish sport is at once untenable.

In many situations it is good policy, in fact absolutely essential, to shoot a few outlying pheasants at the commencement of October. Whilst a pheasant getting up out of the hedgerow, or from under one's feet in a field of roots, is not the most difficult of marks, it is undeniable that a considerable amount of excitement may be extracted from the pursuit of pheasants in the proximity of the boundaries at the opening of the season. Boundary shooting, too, is productive of good in that it helps to keep the hand-reared pheasants within their proper sphere, whilst the wild birds also by this means are induced to seek the shelter of the larger coverts.

The veteran will not need to be reminded that covert-shooting is accompanied by risks not present in other forms of sport with the shot-gun. But for the sake of his good name as a sportsman, it may be as well to impress upon the tyro the necessity of implicitly carrying out all directions as to taking any position that may be assigned to him, and for keeping it when taken. He should remember that, whether walking with the beaters, standing in a ride, or occupying a stand outside the covert, any considerable movement from the position given to him not only increases the risks to his companions, but adds to personal danger. The due observ-

ance of these, as well as of one or two other cautionary rules that instinctively suggest themselves, will cause the veriest tyro to be looked upon as a safe companion in the field. As in woodland shooting the range of vision is so often limited or obstructed by foliage or timber, the sportsman should make up his mind never to shoot at low-flying birds, reckoning an elevation of 15 ft. or so to be the minimum height of his fire ; and of course, to swing the gun across the line of guns or beaters whilst aiming at a moving object is an unpardonable offence. Then, too, in covert-shooting there is the risk of glancing shot to be considered ; and thus, when firing at hares or rabbits, care should be taken to see that every one is well clear of the line of fire—for occasionally one hears of shot glancing at most unaccountable angles. The latter remarks apply with equal force to ground-game shooting on gravelly land, or wherever flints or other stones abound, as well as in some degree during the prevalence of a hard frost.

Having generally described modern methods of partridge-shooting in a previous chapter—that on dogs—I now only offer a few hints on driving. Year by year, the system of driving partridges over the guns is coming more into vogue. Force of circumstances is probably, in many instances, a powerful incentive towards the adoption of the practice. For instance, after very dry summers, it may be confidently anticipated that partridge-driving will be resorted to in many situations where such method has, seldom or never, been practised before. In many districts after a drought, the autumn root crops are a comparative failure, and other shelter for game also being phenomenally scanty, it follows that driving must necessarily be adopted as the only possible means of

obtaining sport with the birds, which in such cases are usually very wild. I have not the slightest doubt that on these occasions many parties, on going out ostensibly to walk up their game, have found birds so wild and unapproachable that in self-defence the original intention has been abandoned, while impromptu drives have filled up the remainder of the day and the bag at the same time.

In partridge-driving it too frequently happens that the guns are dropped here and there, and left to choose such positions as individual fancy dictates. Thus, one sees a ragged line—one gun standing perhaps not five yards away from the fence, whilst his next neighbour may be 25 yards from such shelter. These irregularities are indefensible, for not only are the risks of shooting unnecessarily increased thereby, but each gunner's difficulties are made immeasurably greater. With a well-kept line, the gunner can gauge the danger area to a nicety; but with, for instance, the gun on his right hand several yards forward of his position, and the one on his left some distance behind it, a man may well be excused if he fails to shoot up to his proper form.

There would seem to be a suspicion abroad that the red-legged partridge and the grey partridge are antagonistic, and that the so-called French partridge, being the stronger and heavier bird, drives away the indigenous species. Still, despite all evidence to this effect, the fact remains that the strikingly handsome foreigner has not been wholly successful in such unworthy endeavour. Take East Anglia, for instance, where, in certain districts, mixed bags of forty or fifty brace of grey and red-legged birds are obtained in a day on, to all intents and purposes, unpreserved land. There, although the French birds are more abundant than

elsewhere in England, and moreover are allowed full liberty to increase and multiply, the grey birds invariably predominate.

When walking up game it is not so surprising that grey partridges preponderate when the bag comes to be displayed, for the French bird is exceptionally speedy afoot, and generally contrives to keep a safe distance between himself and the guns, unless the covert is extraordinarily good. In driving, however, this is not the case, for these birds often enough are the first to come over the guns, and, as they preserve a truer line of flight, showing less disposition to swerve from their course, a goodly number are usually bagged on driving days. But even then, with the conditions most favourable towards securing a large proportion of French birds, I have frequently noticed that the grey birds predominate in the proportion of three to one. There may, of course, be situations where these proportions are somewhat altered in favour of the red-legs, but in a general way I fancy *Perdix cinerea* contrives to hold its own pretty successfully.

By some occult process of reasoning it has come about that one of the unwritten canons of game-shooting in England prevents the use of any larger bore than 12 for the purposes of this particular sport. In this respect there is a wide line of demarcation drawn between the shooting of game and of wild-fowl. The game-shooter is arbitrarily limited in the choice of bores, whilst the wild-fowler may of his sweet will and good pleasure elect to use guns varying in size from the diminutive 28-bore to that large shoulder cannon known as a 4-bore, whose internal diameter of barrel-space is considerably in excess of one inch. The con-

ditions under which these two branches of sport are pursued are entirely different, of course, for in game-shooting to fire into the "brown" of a covey of partridges is a sin, and the killing of but one bird with each barrel the only true form of sport. The wild-fowler, however, may kill just as many fowl as may be possible with one discharge; in fact, the killing of half-a-dozen or more of plover, duck, or geese will be accounted unto him an honour, and as a display of skill in circumventing the wildest of all feral creatures in their perfect state of nature.

But a question which concerns game-shooters at the present moment is this: Why should so arbitrary a limit be fixed upon the size of modern game-guns? Personally the matter appears to be one not so much of bore of gun as of weight of gun and its charge. In fact, the weight of shot-charge, if fixed at, say, $1\frac{1}{4}$ oz., might well be allowed to dominate the position. There are, it may be pointed out, guns and guns; 12-bores weighing 7 lb. and 12-bores under 5 lb. in weight being frequently seen out side by side in turnips or in covert. The conversation, so often overheard at shooting-parties, respecting the merits of certain bores, of 20-bore or of 12-bore, is of small value so long as their respective charges remain unnoted. One may well ask, wherein lies the difference betwixt a charge of $1\frac{1}{8}$ oz. of No. 5 shot from a 7 lb. 10-bore, and the same $1\frac{1}{8}$ oz. of No. 5 shot from a 7 lb. 12-bore? The two guns may be absolutely identical in regard to killing circle and driving power, and wherefore should the sportsman using the 10-bore be deemed to be without, and the sportsman using the 12-bore be within the pale in respect of that aforementioned unwritten code of sport?



BLACKCOCK OVER!

It is not too much to say that at the present day much of the shooting has been rendered twice as difficult as it was a generation ago. Formerly many of the grouse and partridges killed rose to a steady point from thick heather or roots, or the cock-pheasant lumbered up from the dense covert, and fell to the easiest of shots before traversing 20 yards. Under such conditions, assuredly, one ounce of No. 6, or even of No. 7 shot, might well accomplish all that was required. Now-a-days, however, No. 5 shot is not too large a size to use on most occasions under the altered conditions of the sport of game-shooting; and for grouse, pheasant, or partridge, the season through, this is the size I would recommend. In some situations, as, for instance, in the case of guns posted in a valley-bottom and firing at the tallest of tall pheasants as the birds stream overhead from the hill-top, No. 3 shot has before now been requisitioned in order to bring the game satisfactorily to bag.

In these times proprietor and gamekeeper alike are striving to provide increased sport, and, equally, to render the shooting of game the more difficult. In fact, now that the driving of birds over the guns is widely and increasingly practised, the shooting of game has been rendered twofold more difficult. The wonder has often enough been expressed as to what our fore-elders would have said could they but see and handle the modern hammerless breech-loading gun. Unquestionably, such triumphs of the gun-maker's art—the ejecting mechanism, single triggers, and so forth—would provide no little cause for wonderment. At the same time, the methods adopted in the shooting of game might be expected to

cause equal astonishment could such resurrection take place.

An old cock-pheasant coming down wind at express speed and at an altitude of 100 ft. or more, certainly is a "teaser." One of the prettiest sights in connection with game-shooting is that of a cock-pheasant crumpled up in mid-air, falling like a bolt precipitately to earth, whilst moving at great height and speed. To see a truly brilliant shot pick off bird after bird without the slightest hesitancy, striking each one well forward, killing cleanly and well, whilst a more or less unbroken stream of pheasants is passing high overhead, is a sight worth travelling some miles so see. Would that those who discourse so eloquently but erroneously of the "modern pheasant battue" could see this sport in such perfection!

Instead of hunting pheasants through spinney and covert and killing them as they get up near at hand, both host and gamekeeper now cudgel their brains, and the energy of quite an army of beaters and stops is requisitioned, to render the killing of the pheasants as difficult as possible to the guns, over whom these birds are directed.

Great and increasing attention has been given of late years to this matter of driving pheasants. Timber has been felled, and new coverts planted, largely, if not wholly, with the object of presenting higher and more sporting shots, and generally with the view to render pheasant-shooting more difficult. Hill-side or hanging coverts, or shootings wherein are valleys in which the guns can be posted, are naturally, under these circumstances, most highly prized. The gamekeeper who is favoured with natural advantages such as these may easily offer sport of a higher order than can those of his

brethren less favourably situated in a level country. This, however, must not be taken to mean that sport on the level is much inferior to that obtainable on hilly land. Excellent shooting may be had from coverts situated on the flat, provided the timber is of good growth and the pheasants are made to rise well.

Owing to the hardiness of the pheasant and its ability to withstand the rigours of winter as experienced in North Britain, this fine game-bird is being extensively introduced into most suitable coverts in Scotland. In fact where the woods are unsuitable steps are taken to rectify defects. Many existing woods, probably large and rambling in character, are not too well adapted for the purposes of pheasant-shooting. These will have to be carefully overlooked and divided in sections or beats by cutting rides through them, and in carrying this out due regard must be had to the selection of suitable positions in which to post the guns. This choice of stands is an important matter, as upon the wisdom or otherwise of the selection will the whole character of the future sport depend, this choice greatly influencing the question as to whether high or low pheasants can be sent over the guns. Already the fear has been expressed that the over-production of pheasants in North Britain may exert a baneful influence upon the indigenous game-birds. It is not altogether improbable that it will have the effect largely of banishing both capercaillie and black game from their accustomed haunts.

CHAPTER XIII

QUAIL. LANDRAIL. WOODCOCK. SNIPE. HARE.
RABBIT

BY reason of the altered conditions of sport it is not at all improbable that some quail are overlooked by sportsmen in England. My experience of quail leads me to believe that these birds may remain completely unnoticed by partridge-shooters practising the modern method of walking-up or of driving their game. Quail sometimes lie very closely, and in a general way, I believe, they take wing far more reluctantly than do partridges ; consequently, where undiscovered by keen-scenting pointer or setter, many sportsmen may remain in total ignorance of the presence of quail upon their shooting. It is also a fact that these diminutive game-birds are sometimes overlooked even when flushed in the shooting-field. On one occasion a shooting companion of mine let some of these straight-flying birds go unscathed in some stubbles, he being under the impression that they were partridges too small to shoot. Then, too, amidst the host of migrant larks, thrushes, and redwings frequently met with in turnips or other shelter in late summer and early autumn, quail may sometimes be overlooked by sportsmen not thoroughly acquainted with them.

This notwithstanding, the fact still remains that these migratory game-birds do not now visit this country in such numbers as formerly. It is apparent that a dry England is more appreciated by quail than is a wet England, for in dry summers they are met with, and rear their broods in many districts in this country, where they are unknown in wet summers. Then, too, after nesting they spread themselves over a wider area, and are thus much more frequently found by the partridge-shooter in September. The year 1893 will be remembered by many game-shooters as an exceptional year for quail. The summer of that year was remarkably dry, and these birds were both numerous and remained later than usual, many staying throughout October, and in some districts well into November before departing southward for the winter. Quail had a remarkably wide range in Great Britain in 1893, they then being seen and shot in most counties from Cornwall to Suffolk, and from the Isle of Wight to Perthshire.

Explicit directions for the shooting of quail need not be offered, for the simple reason that at the present time there are no places in this country where they may be systematically followed. If one could insure finding quail at any time, I should recommend charges of No. 7 shot and a steady, close-ranging pointer as the most effectual means for bringing these birds to bag. As, however, we cannot rely upon meeting with them just how and where we want, I would say that ordinary loads used for partridge-shooting may suffice whenever quail are sprung.

It would be well if our migratory game-birds—quail, woodcock, snipe and landrail, possibly, also, certain wild-fowl such as brent and grey geese, wigeon and other ducks, plover, curlew, etc.—could be protected

throughout their breeding season by International agreement. There are difficulties in the way, but perhaps these would not prove insurmountable. For instance, there is a difficulty with respect to the woodcock; this bird's visit to this country being timed most opportunely, from the sportsman's point of view, in the season proper for its shooting. Nevertheless, this circumstance would entail a hardship upon Scandinavian sportsmen if the spring shooting of woodcock were to be vetoed, as in autumn, with the leaves still on the trees at the time of their departure, the shooting of these birds cannot be so well accomplished in that part of the world.

Still we ourselves are in a similarly unfortunate position with regard to quail and their Mediterranean capturers, for these birds rear their young in this country, and after affording but a brief period of sport to the September partridge-shooter they depart southward. The diminution in the number of quail visiting this country may be attributed to the vast slaughter of these birds effected during their passage across Northern Africa and Southern Europe. This remark probably applies also to the landrail, another toothsome morsel.

The very great destruction taking place in extreme northern regions with respect to wild-fowl—eggs and young and moulting birds being taken in large numbers—might be difficult to regulate. Still, possibly, means might be found for supplying the northern tribes taking such heavy toll of Arctic-breeding fowl with other food in place of the birds and eggs which doubtless at present are in great measure necessary to their subsistence.

Perhaps the simplest solution of these and other difficulties to be encountered would be the institution of a policy of give and take, thereby according absolute

protection, internationally, and for a whole year at a time, to certain birds. For example, 1904 might be known all over Europe and Northern Africa as a quail year, during the whole of which period no quail might be taken, sold, or offered for sale. Similarly, 1905 should be a year during which woodcocks only would be as strictly protected; 1906 a widgeon year; 1907 a goose year; 1908 a year in which plovers and their eggs could not be touched—these periods to revolve in ever-recurring cycles. I fancy that by some such means International co-operation for the protection of sadly-depleted stocks of quail, woodcock, plover, and similarly valuable creatures might be consummated. In the way indicated neither game-shooter nor wild-fowler would experience much loss of sport in any one year, as certain birds would be in season, and with regard to those protected there would be reasonable expectations of better sport in future seasons.

The Landrail is a short-winged bird, and moves with laboured flight on first launching itself in the air. It is, perhaps, as frequently missed as even the woodcock itself, by the too-eager or the thoughtless gunner. This not by any means from inherent difficulties presented by the flight of the bird, nor of the course taken by it; for, invariably, it flies in an even line straight away from the shooter. Moreover, in a general way, the absence of trees or other visual obstruction enables the coolest and deadliest aim to be taken. Still the fact remains that youthful and too-keen sportsmen do miss this bird on occasion, and very badly too, sometimes even failing to retrieve the initial error by bringing down the quarry with their second barrel. The bird, often as not, rises quite close to the sportsman, possibly causing some little excitement

by springing up from under his feet. In such case the tyro will do well to refrain from the first natural impulse to throw up the gun to his shoulder, as after the lapse of a second or two he will find that a steady and far more certain shot may be made at fair sporting range.

It may be conjectured from this that the landrail does not rank very high as a sport-giving bird. Sportsmen shooting over dogs may often pronounce the landrail, with its running, skulking habit, a thorough-going nuisance, from the fact that its appearance on the scene breaks the routine of their sport, and moreover is well calculated to impair the efficiency of highly-trained dogs.

To the youthful gunner, however, this scarcely applies, the active pursuit of the landrail, once entered upon, being usually much to his liking. In such pursuits he may experience many moments of keen excitement, comparable only to that derived from that usually boisterous fun known as a rat-hunt. Indeed, from the speed with which it traverses thick and tangled covert, the landrail may well be likened to a rat. But the possession of wings which the bird may use in order to effect an escape just when excitement runs highest, lends an additional charm to the rail-hunt in the eyes of the school-boy gunner. Given a good stretch of big clover aftermath, or other suitable and sufficiently thick shelter containing several landrails, the young gunner who is accompanied by keen-hunting spaniel, or even terrier, may get many half-hours of first-class fun in pursuit of these winged rats.

However much the more sedate gunner may resent the intrusion of the landrail upon his sport of partridge-shooting over dogs, few old hands will be found refusing

the couple of landrails that may be offered them by their host at the end of a day's sport.

October is usually upon us before the foreign-bred Woodcock begin to arrive. Mid-October seems to be about the time when the great flights of woodcock strike our east coast; but weather influences appear to affect these birds on migration quite as much as other species of winter fowl. Probably also the question of food supply has much to do in fixing the date of their departure from summer haunts. Naturally, the gunners on the coast keep a sharp look-out for the passing of the woodcock, and, as a consequence, many exciting scenes are witnessed. Spurn Point and the higher ground on the Yorkshire coast-line north of that promontory have been, from time immemorial, favourite resting-places for the woodcock on its arrival in this country. The place is rich in woodcock lore, and many are the dodges employed by the local gunner to excel his neighbour in making a bag of woodcock. So soon as it is known that "cock are over" the gunners in the villages along the coast are all bustle and excitement, and whenever a big flight happens to have alighted the fun is fast and furious. Woodcock seek shelter in all sorts of places when resting after their over-sea journey; at such times they may be turned out of hedgerows by the roadside, and occasionally from cottage and other gardens in the villages, and even from outhouses in the farmyards. If perchance there should be left at the time of their arrival any late beans yet unharvested, the stooks are almost certain to hold a few woodcock, and several very good bags have been made in the bean-fields along the coast. Energetic sportsmen in that quarter have not uncommonly-secured ten couples of woodcock in a day to their own guns, and

it is on record that very much heavier bags of freshly-arrived woodcock have been made in the most favourable seasons.

In the district mentioned the arrival of two widely different species of winter migrants are said to surely prognosticate the coming of the woodcock. These are the short-eared owl and the golden-crested wren. For this reason the former is commonly called the "woodcock" owl, and the latter the "woodcock pilot." Most sportsmen are familiar with the appearance of this ground-owl as it flaps up out of turnips or long grass in October. Possibly, however, not all the short-eared owls then seen are foreigners, as some remain to breed in this country, for I have found it nesting on the ground in some northern marshes. The diminutive gold-crest, too, is quite a feature on certain parts of the east coast in mid-October, and I have sometimes found such enormous flights, that every bush and tuft of bent-grass seemed to be tenanted with one or more of the little "woodcock pilots." At such times there need not have been any difficulty in forming a closer acquaintanceship, for a shooting-cap could readily be thrown over one or other of these tiny mites.

Many of the keener gunners along that part of the coast are up and away at the first streak of dawn for many days together during October in anxious expectation of being lucky enough to fall in with a good flight of woodcock. At this time people who seldom handle a gun are to be seen eager in their quest, and as a consequence scores of these birds are killed in a plentiful season. This perhaps is not to be wondered at, seeing that now and again a fair shot may bag his ten or more couples of woodcock, for which he will find a ready

market at a price something like 4s. per couple. Still, although woodcock are thus ruthlessly followed by these 'longshore gunners, the total of killed, even in seasons of greatest slaughter, probably represents but a small percentage of the arrivals. Some would have us believe that the newly-arrived woodcock is a poor half-starved weakling, but let those who entertain this idea essay to shoot these birds, and they may possibly have cause very promptly to modify such opinion. Fortunate, perhaps, it is that these migrant woodcock are not always too easy to bring down even in the open, and fortunate, too, for sportsmen elsewhere that the aim of the average coast-shooter is not infallible, considering the unlimited opportunities now and again offered him for making a bag of woodcock.

It is a matter for some surprise that ridiculously easy shots are frequently missed under circumstances for which the most inventive imagination can find little excuse. It has been said that, in proportion to the number of shots fired, the woodcock is missed oftener than any other game-bird, save, perhaps, the snipe. But in England, at all events, the woodcock is usually found in thick covert, and in such environment it cannot be said that the shooting of these birds is at all easy. Moreover, it may be said about woodcock-shooting that anxiety to kill this comparatively rare game-bird often proves an incentive to fire at too great distances. Woodcock have remarkable powers of flight, different to that of other game-birds, for at times they are as dodgy as the snipe ; to insure becoming a really reliable woodcock shot, one must have a thorough acquaintance with the ways of this bird, both in covert and in the open.

For several generations sportsmen have regarded the

shooting of snipe as one of the most diverting forms of sport with the shot-gun. At one time the title "good snipe-shot" was looked upon as the M.A. degree of shooting, the highest degree attainable with regard to proficiency in the handling of the shot-gun—in fact, a first-class certificate in the art of shooting. Now, perhaps, this scarcely holds good under modern conditions of game-shooting. With wind-borne grouse or partridges flashing past his stand at express-train speed, the game-shooter of to-day has even less time for a leisurely display of skill than has the snipe-shot when bringing to earth his fast-rising quarry. Comparisons apart, snipe-shooting is a sport that must ever deservedly rank high in the estimation of all true lovers of the gun, for, most assuredly, it taxes the energy, resourcefulness, and skill of the gunner to an exceptionally high degree.

Although snipe are distributed, here and there, throughout the length and breadth of Great Britain and Ireland during the nesting season, it is the foreign-bred birds that are the mainstay of the snipe-shooter in these islands. These migratory snipe, similarly to the woodcock, arrive in their thousands during the three or four weeks following onward from mid-October. Partridge-shooters plodding laboriously through the dripping swedes or other turnip-fields in Eastern England on rainy days about the second or third week in October occasionally flush a snipe. Such incident is invariably accepted as a tolerably certain indication that the foreign snipe have landed on our shores. This annual migration of the snipe is perhaps the most certain of all features connected with their movements whilst visiting this country. The fact is, these birds are so erratic in

their journeyings and choice of feeding-grounds, and extremely unstable with regard to the length of their stay in any particular haunt, that "here to-day, gone to-morrow," is a phrase often rising to the lips of the snipe-shooting fraternity.

Many and exceedingly varied are the instructions that have been issued to the inexperienced snipe-shooter. Few sporting topics are more fruitful of argument as an after-dinner discussion than is that of snipe-shooting. Truth is, the conditions governing the whole procedure are so exceedingly complex and varied that no hard-and-fast set of rules can be made to apply to all cases with equal suitability.

An axiom widely accepted among shooting men of experience is to the effect that the most successful way to take snipe is to walk down wind on to them. This plan, certainly, is much to be commended, as it helps the shooter to get over that peculiarly disconcerting rolling or twisting movement displayed by snipe on rising. Snipe, as do other birds, invariably rise with their breasts towards the wind; thus, though the snappiest of snap-shots may fail to secure a snipe in the act of springing, a comparatively easy side-shot may be obtained a second or two later as the bird turns to change the direction of its flight away from the sportsman. But this method is not without its drawbacks, the chief objection urged against it being that the sound of the sportsman's movement is carried by the wind in the direction of the snipe; which thus become aware of his proximity sooner than they would had he proceeded up wind on to them. Still, however efficacious, this plan of down-wind walking is seldom likely to be pursued religiously the whole day through, for on

marshes of large extent few snipe-shooters, be they endowed with illimitable stores of energy and enthusiasm, would have patience enough to retrace miles of once beaten bogland in order to resume their down-wind progress on the strip of unbeaten marsh alongside.

In addition to the twisting or rolling flight already mentioned, there are other reasons why snipe are so difficult to bring down. One is, that on springing from the ground, these birds almost instantly develop their highest rate of speed. Very frequently also they are rising rapidly in the air during the whole of the time they remain within gun-shot, and thus, all too often, the shot is sent whistling harmless beneath them.

Shooters are not in perfect accord respecting the proper time to fire at snipe. Some contend that the best time to take them is at the moment the bird springs into the air. Others, on the contrary, prefer to wait until the rolling flight is ended, and the bird has settled down into a more even and steadier mode of progression. In the first case it is not every gunner who can display sufficient celerity of movement to insure getting on to his bird in the remarkably brief space of time at his disposal; in the latter case it may be urged that a wild-rising snipe will be out of gun-range ere he assumes a more level style of progression.

One thing a snipe-shooting tyro will do well to bear in mind is to aim well over his birds, and as a help in this direction the use of a straight-stocked gun is to be recommended. The 12-bore is the best gun to use for the general purposes of the snipe-shooter in this country. In the hot swamps of India or Burma, possibly, a $4\frac{1}{2}$ lb. 28-bore may have much to recommend it, for in such

situation every ounce of weight tells. Advocates of the small-bore guns for snipe-shooting claim for their diminutive arms that, being so much lighter, they are more quickly brought to bear than are larger guns upon fast-flying birds. Still, with the wider killing circle of its increased shot-charge, the 12-bore will contribute, day in and day out, more greatly to the success of the snipe-shooter of this country than probably any other denomination of shot-gun.

On whatever grounds snipe-shooters may agree to differ, they must of necessity concur in the opinion that with respect to the explosives at his command the gunner of to-day is in a position far superior to that occupied by his fore-elders. In the old black powder days the humid atmosphere of the marsh would often hold in suspension the thick smoke of the explosion, thus completely excluding from view all objects in front of the shooter, and so frequently preventing the use of the second barrel. Now, the thin vaporous smoke of present-day nitro-compounds is little in evidence, whilst the slight noise of their explosion, of course, exercises a far less disturbing effect upon a marsh full of shy wild-fowl than did the all-terrifying roar of the old black powder. On another point, also, there would seem to be general agreement among snipe-shooters, namely, with regard to the size of shot most suitable for their sport, the size known as No. 8 being, invariably, selected by the snipe-shooter of Great Britain. This small size of shot is, of course, best employed when snipe are the sole objects of pursuit, but where teal or wild-duck are met with No. 6 shot may be used with much advantage.

It may here be remarked that in 1 oz. of each of the

sizes of shot commonly or occasionally used for game-shooting, there are almost precisely the same number of pellets as in $1\frac{1}{4}$ oz. of the next largest size, omitting the modern half-sizes of shot numbered $5\frac{1}{2}$ and $6\frac{1}{2}$. This fact, which hitherto appears to have escaped notice, can be ascertained on glancing at the following little table:—

	Number of pellets in a charge of shot.					
	No. 3.	No. 4.	No. 5.	No. 6.	No. 7.	No. 8.
1 oz.	—	172	218	270	340	450
$1\frac{1}{4}$ oz.	175	215	272	338	425	—

This information may possibly prove of some little assistance to sportsmen, as when targeting guns the value of the patterns displayed by the different sizes and charges of shot may thereby be the more readily estimated. Still, whilst aware that $1\frac{1}{4}$ oz. of No. 5, and 1 oz. of No. 6 are practically identical with regard to the number of pellets they contain, we should probably be wrong in assuming that like similarity would be exhibited with regard to their patterns. Nothing short of actual trial at the target will determine as to the shooting of a gun with various charges and sizes of shot.

With regard to the shooting of hares, I would remark that many people look upon the straight-away shot, at fur or feather, as the easiest of all to kill. As a matter of fact, however, it is one that is far too often bungled over. Indeed, in many instances, when a kill is scored, this is owing as much to the spread of the shot as to the skill and good judgment of the marksman. The straight going-away hare may be looked upon as one of the most difficult shots to kill satisfactorily that is ordinarily presented to the game-shooter in this country. To hit so large an object moving in the open is well within the power of the average shot. Nevertheless, far too many

hares—and these remarks apply in similar proportion to rabbits—are stopped merely through having one or both hind-legs broken. Sometimes they are sent away badly wounded simply because the bungler has aimed too low.

Very few moments' reflection should serve to convince as to the cause of this ; then, of course, with the cause discovered the remedy is not far to seek. Two causes combine to make the going-away hare difficult to kill



THE BROWN HARE.

outright:—1. the comparative invulnerability of the animal so presented, for from this point of view the back of the head is about the only part on which the shot can tell with immediately fatal results ; 2. because the thoughtless or careless shooter cannot, or will not, divest himself of the fallacious notion that it is necessary to have full view of the hare at the moment of pulling the trigger. Momentary reflection should convince that if the animal aimed at is moving straight away from the shooter, aim must be taken over it in order that it may

run into the shot. When, therefore, the aim is correct the hare, or some portion of it according to the distance, is lost sight of beneath the barrels of the gun.

No. 5 is the best size of shot for the general purposes of the hare-shooter. Big, strong hillside hares, in their thick winter coats, take a good deal of stopping. Under ordinary circumstances 35 yards is an extreme range at which to fire at hares running directly away from the



SCOTCH HARE: WINTER AND SUMMER.

shooter, and I know of no more severe test of the capabilities of a gun than the shooting of these animals under these conditions. With No. 3 shot in the gun I have found that some few yards may be added to this distance; and from the frequency with which hares are killed outright at 45 yards with this charge fired from fully-choked guns, I feel fully justified in taking all going-away shots at 40 yards, and crossing shots at a still more extended range with guns so loaded.

In some situations hares will take to water without

hesitation, swimming fairly fast, but with some splashing in the process. This I have known to my cost, it having spoilt several drives in which I have been participating. On one low marshland shooting where the ground is flat as a billiard-table, and shelter wherewith to screen the guns exceedingly difficult to find, the old hares would, on these driving days, readily swim a fairly wide river, also a drain or two, rather than face the guns once the firing had commenced.

With the sport of rabbit-shooting all sportsmen are more or less familiar, for this animal is the most abundant and widely distributed of all objects of the shooter's quest. How often one hears the remark made in connection with cartridges: "Oh! anything will kill a rabbit." Given fair law, however, there are few things the same size, furred or feathered, take more killing than the rabbit. Then, too, thorns and briars, rough grass and coarse herbage often intercept or break the force of the shot-pellets. Or, perhaps, the rabbit is running down a furrow or between the turnip-rows, and the shot must cut through part of the obstruction to hit him at all, otherwise it will simply flick a little fur off his back.

Few things more decisively stamp the gunner as a good shot than the effective manner in which he kills his rabbits. There are few prettier sights in the shooting-field than of a man taking all rabbits as they come thick and fast, not picking or choosing his shots, and killing cleanly and well almost every rabbit that stirs within his range of vision. High-class work of this sort cannot be accomplished with inferior ammunition; everything—powder, shot, caps and wadding—must be excellent in their way or assuredly a faulty shot must now and again occur.

How many men, fairly good shots, acting on the

mistaken notion that "any sort of cartridge will kill a rabbit," have failed utterly to satisfy themselves in the course of a brisk day's sport. Under the circumstances rabbits probably will have been sent away wounded that should by right have been killed handsomely on the spot ; and then, in the attempt to remedy matters, on finding that the cartridges shoot badly, the gunner will perhaps commence taking his game too near at hand, and so end in blowing them to bits or stuffing them with lead. Many a host who has been disappointed by the poorness of skill displayed by one or other of his guests at a rabbit-shoot might, if he cared, trace the disappointment to faulty cartridges. Rabbits certainly require as good and as straight powder as any other game, and gunners should remember that it is not fair to themselves nor, when guests, to their hosts, to employ inferior cartridges even for rabbit-shooting, for by doing so a certain percentage of rabbits fired at will be sent away to die in their holes.

Personally, I find No. 5 a good size of shot to use for rabbit-shooting, and I much prefer it to No. 6 or smaller sizes. In fact were I to change to other sizes for this purpose I should make choice of that still larger, as in a general way rabbits are best stopped with fairly weighty pellets. Mr. R. J. Lloyd-Price, who has had as much experience in this direction as most men, recommends a charge of $\frac{3}{4}$ oz. of No. 3 shot in 12-bores for heavy rabbit-shooting days. That this load answers really well in practice, may be inferred from the fact that it has been deliberately chosen for use on an estate where rabbits are so exceptionally numerous as to enable a total bag of 5086 to be killed by ten guns in one day's shooting.



A LUCKY SHOT AT DAYBREAK.

SECTION IV

WILD-FOWL SHOOTING

CHAPTER XIV

SWANS. GEESE

TO encompass the death of a wild swan by his own unaided skill in waylaying or stalking has ever been the yearning of the keen young wild-fowler entering upon his novitiate. Once, however, this feat is successfully accomplished he will possibly find that quite as much excitement may be extracted from the shooting of wild-duck and other fowl of lesser size. On their first appearance in British waters in late autumn wild swans are usually more approachable than at any other time, as, fresh from northern wilds, they are then more or less unfamiliar with the arts and wiles of the fowler.

Hard weather in the Baltic and other northern seas and strong east winds will surely bring wild swans to our coasts in December and January. The fowler anxious to shoot these big fowl must then be on the alert. The greatest measure of success will result from his being first on the scene after the arrival of the swans from over-sea, as but few shots from rival gunners will suffice

to make these birds extremely wary and greatly reduce his chance of coming up within gunshot of them.

A single- or a double-handed gunning-punt will prove most helpful in the sport of wild-swan shooting. Thus equipped the fowler may follow these birds in the shoal waters along the coast, in just those positions where the best of the shooting is likely to be encountered. This punt should be decked fore and aft, and built on lines that will insure its seaworthiness, as the following of swans, of brent geese and the like, will take the gunner into rough water now and again. A gun carrying 1 lb. or more of shot may be selected for this work. This heavy charge may be fired in comfort by means of a swivel attachment having steel springs or rubber buffers for taking up the force of the recoil; or the stress of the latter may be relieved by means of the well-tried and simple expedient of the rope-breeching.

It may now and again occur to the sportsman, armed with muzzle-loading punt-gun, to come across a herd of wild swans unexpectedly whilst in pursuit of other and, of course, smaller fowl. If brent geese or wild-duck happen to be the object of his quest at that moment, he will probably have his gun loaded with No. 1 or BB. shot; either size will answer right well provided he makes the heads and necks of the sitting swans his point of aim. With a breech-loading punt-gun large shot may be readily substituted for smaller whilst afloat, but in the case of a muzzle-loader it will not be safe to do this without running ashore, or to water sufficiently shallow to enable the gunner to effect the desired alteration by stepping out of the punt in his long wading-boots. For flying shots at swans at long range mould shot will prove most effective, one pellet of SSG. from a powerful punt-gun

striking a swan full and fair at 100 yards or more will suffice to bring it down. It is well to remember, however, that as there are but 240 pellets in 1 lb. of this large size of shot—considerably fewer pellets in fact than are contained in the ordinary load of the partridge- or the grouse-shooter—it will fly thinly at ranges much exceeding 100 yards, thus minimizing the gunner's chances of hitting even so large an object as a swan.

Swans may be met with under circumstances other than the foregoing, as, for instance, whilst the wild-fowler is cruising about in small sailing craft; or upon some loch or other water where a shot may be obtained by stalking. In either case powerful 4-bore or 8-bore shoulder-guns will prove most useful adjuncts; either of these bores loaded with suitable charges of AA. of 40 or AAA. of 32 pellets per oz. should insure the downfall of a swan at 50 or 60 yards.

In shooting wild swans from a punt the fowler should bear in mind that these heavy birds cannot spring from the water like mallard or widgeon. As they have to beat along the surface for some distance before getting fairly on the wing, he may take full measure of their disposition in order to seize upon the most effective moment for firing the shot. Once fairly under way swans move at good speed, and the shooter must be careful not to under-estimate either their rate of progression or the range, as from the measured wing-beats and large size of the bird he may easily fall into error on either point.

The coast-gunner of to-day may, in very mild winters, go through a whole season without once seeing a gaggle of grey geese. In many parts of our islands the inland wild-fowler, too, can walk scores of miles night and morning, on his pilgrimage to and from the ducking-

ground, without hearing that inspiriting music emitted by a skein of grey geese as it sweeps across a country. It may therefore surprise some wild-fowlers not a little to learn that grey geese resort annually in hundreds, nay, in thousands, to certain clearly-defined areas in this country, be the weather mild or severe. Essentially inland feeders, the grey geese usually pitch upon some spot where grassy marshes or corn and stubble fields lie within easy flight from the sea-shore or some wide estuary. Unless driven by deep snow or heavy frosts to seek fresh pastures, the birds seldom stray far from their chosen haunt. Thus it is that persons residing but a few miles from a strong colony of grey geese, or within similar distance of the line regularly taken by hundreds of them on the morning and evening flight to and from the feeding-ground, may long remain ignorant of the fact that these fine creatures have taken up residence in the district. Now and again their tell-tale chorus is borne upon the breeze as a dense cloudlike mass of the birds is seen in the distance, or as, possibly, a skein of geese a score yards long trails like a thin thread across the sky a couple of miles away. But this is the most that is to be seen of them, and the anxious gunner discovers that it is necessary to be right on the spot if he would have sport with these birds.

Whenever deep snow covers their feeding-ground, and exceptionally severe winter weather renders inaccessible everything in the shape of green food and corn, the large gatherings of geese get broken up and scattered about the country; birds are then met with in situations where they are rarely seen in mild weather.

It is a remarkable fact that all wild geese evince strong partiality for certain districts. Thus we find one species

regularly visiting one section of our islands and another species another part, seldom straying far therefrom unless, as previously remarked, they are driven to do so through stress of weather or a failure of their food supply from whatever cause arising. Our only resident goose, the grey-lag, we find, winter and summer, in the vicinity of its breeding haunts in the Outer Hebrides, from whence, owing to the invariably mild character of the winters experienced in those parts, it seldom has occasion to stray. On the Scottish mainland, however, the grey-lag is not so constant, being there subjected to greater vicissitudes of climate.

The western side of the British Islands would seem to be the principal resort of another species of grey goose, the white-fronted. They also appear to be remarkably precise in their choice of feeding-grounds, showing a preference for certain bays and estuaries. The white-fronted geese regularly visit some of the western islands of Scotland, and it is a singular fact that whilst they are strongly attached to one spot or island, they will leave others in the vicinity severely alone, although the latter, apparently, are equally good as feeding-grounds. One strong haunt of the white-fronted goose in England is at Berkeley Castle in Gloucestershire, where some 2000 to 3000 are to be found each winter from the first week in December till March. At this place they have a secure resting-place and feeding-ground in the large low-lying grass-fields close by the estuary of the river Severn. The white-fronted goose is not, however, the only member of the grey goose family found at Berkeley Castle, for both bean and pink-footed geese resort there also. The two species last named are the first to arrive, usually putting in an appearance about the third week in Sep-

tember. Singularly enough, these autumn visitors make way for the white-fronted geese ; their departure in the last week in November is well timed, for this is just about a week before the arrival of the other anserine claimants of Lord Fitzhardinge's hospitality. In all probability there is no spot in England where the grey geese are more judiciously protected, or where the sport of shooting them is more systematically conducted. Screens are erected in the line of flight taken by the geese as they pass to and from their feeding-ground and the water. The gunners are concealed behind these "blinds," and the geese are driven over them by the keepers. As the ground is but seldom disturbed, heavy bags of geese are occasionally made in this way. Owing to its rarity, shooting such as this is held in high estimation ; it is not surprising to learn therefore that records of this sport have been kept at Berkeley Castle for more than fifty years.

Several writers have stated that the bean goose is our commonest wild goose, but as this bird has frequently been confounded with the pink-footed goose, the statement needs to be received with caution. In any case, so far as certain counties on the eastern side of England are concerned, it is entirely misleading, for there the bean goose is decidedly rare as compared with its relative, the pink-footed goose. I have observed also a marked difference in their choice of food ; the bean goose, apparently, subsisting quite contentedly on a diet of grass, which fact may account for the greater numbers of this species met with in Ireland, whilst the pink-footed goose is essentially a grain-feeder whenever corn of any kind is obtainable.

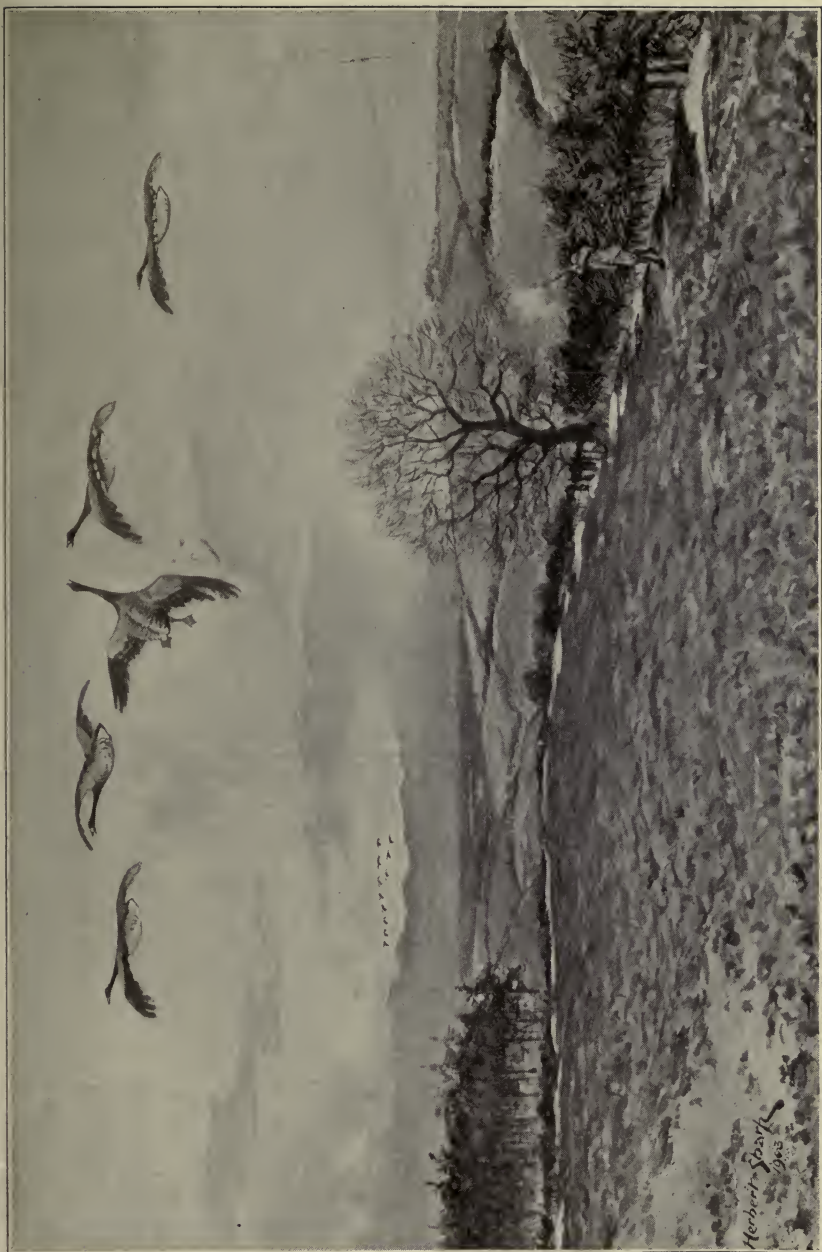
As illustrative of the good fortune which does occa-

sionally come in the way of the wild-fowler, a little adventure of mine in connection with the shooting of bean geese on an East Yorkshire marsh may, perhaps, be deemed sufficiently interesting and remarkable to warrant my recording it. I was visiting the marsh in the daytime, early in December, with a friend, a youth of seventeen, whose love for sport was so keen that he tramped through many heavy days and for scores of long miles by my side, content merely to carry the bag, and by looking on to gain some experience in the field before using a gun.

I had on this particular day taken the precaution to put on a pair of wading-boots, as in that neighbourhood one sometimes spent half the day, more or less, in the ditches, when following plover or when duck-flighting. I had got down into a deep ditch, whilst my companion, Artie, went round some golden plover to drive them, if possible, in my direction. I had not long to wait before some of these birds came along, and I secured a couple; then came the first surprise of the day. While following the departing plover with my eye, to see if any more birds dropped, I was much startled to see half-a-dozen grey geese coming along. They appeared to have only just got on the wing, and it was evident that the report of my gun had disturbed them, although, apparently, they were unable to determine whither the sound had come. After veering slightly the geese passed on, and alighted in a clover field four or five hundred yards away. By a long and arduous stalk through water a foot or more deep, I managed to get into a better position before my companion started to get round in order to drive them. On being disturbed, the geese offered only a very long shot, that is for a

12-bore gun. They must have been 70 yards away, but I singled out a fine goose for the first barrel, and as this had little effect, a second shot followed. Still the goose went on, but only for a few yards, when it commenced to tower in precisely similar manner to a partridge, and after mounting in the air for some little distance, finally fell dead as a door-nail. The succeeding four or five hours were spent in pursuit of plover, taking between times, as opportunity offered, an occasional shot at partridge or hare. We had given up all thought of the geese, for the survivors had flown, apparently, many miles. Our surprise was great, therefore, as we were proceeding, about four o'clock, to take up our stand for the coming duck flight, to discover five geese sailing along at no great height from the ground, and, finally, to see them settle in a field about half-a-mile away. We were indeed in luck's way that day, for these fine birds had alighted within 20 yards of a deep ditch, and in this remarkably accessible situation I was successful in stalking, and still more successful in shooting them, for on rising from the ground they were so well disposed for the first shot that three fell immediately to it, whilst with the second barrel another goose was secured. Our luck, good as it was, did not end here, for the sole surviving goose was so dazed and unstrung by the loss of his companions, that he actually alighted in an adjoining fallow, where, by carefully stalking under cover of the ditch and through water about 2 ft. deep, I managed to secure the sixth bird also.

The herd of pink-footed geese visiting East Yorkshire varies greatly in point of numbers, season by season; at one period thousands may be found in the locality,



GREY GESE IN WINTER ON THE YORKSHIRE WOLDS.

whilst at another possibly not as many hundreds are observable. In the best seasons I have for weeks together observed several thousands of these grey geese fighting night and morning over the Yorkshire Wolds or resting upon the islands of the Upper Humber.

Novices sometimes express surprise that not more grey geese are shot by punt-gunners. The answer to this is, however, that grey geese are both day and inland feeders, and therefore in open weather are usually only to be found on the tidal waters at night. When newly arrived in the autumn grey geese may now and again be approached by a gunning-punt, but after receiving their baptism of fire at the commencement of a season, a remarkable combination of most fortuitous circumstances is needed to enable punt-gunners to outwit a gaggle of these birds upon the water.

On first visiting a certain estuary in the north, I was much surprised to find that the professional punt-gunners of the neighbourhood would seldom attempt to punt to the big gaggles of pink-footed geese that were to be heard and seen each night and morning. One of these men, who had shot for forty years in that locality, was at great pains to initiate me into the mysteries of goose-shooting, but even then my innocence and sanguine temperament frequently caused me to attempt to stalk with the gunning-punt every gaggle that came in my way. The thing appeared so easy: there were the geese, looking so big and handsome, and only a narrow strip of water separating us, that I was continually impelled to go after them, in fact I could not resist the temptation for a long time. Many fruitless journeys and weary paddlings home against tide taught me better, until at length I came philoso-

phically to regard the most tempting-looking gatherings of these geese with perfect equanimity.

One afternoon my old punting friend invited me to accompany him on a foray after the grey geese. He had been carefully watching them for some nights, and thought the time had arrived when a heavy shot might be made, and as each of our punt-guns carried a charge of 20 to 22 oz. of shot, he reckoned that with luck we might return with forty or fifty* geese aboard. Unfortunately I could not close with his kind offer, as I had made arrangements to visit an island close by, there to await the coming of the geese as the moon arose. We pushed off at the same time, I to visit the island, whilst he, with a fellow-professional, went in quest of the geese we could hear calling upon a distant mud-bank. We paddled side by side through one of the blackest nights it has ever been my lot to be out in. I remarked to these men that they would never be able to discern the geese, but they replied that they would shoot by sound if not by sight. Shortly afterwards I turned off to go alongside the island, they continuing their journey right out upon the inky waters. I had to paddle about a mile before reaching the fighting-ground, and several times on the way my punt ran aground on one or other of the little mud promontories jutting out from the island; then I had to push off and grope my way round them the best way possible.

At length, after about an hour, I considered I must be nearly abreast of the fighting-ground, the boat was run ashore, and, carrying the little anchor well up on to the mud; and taking my 12-bore and cartridges, I walked over in the direction of the shelter I had erected for these night raids on the geese. No shelter was to

be found, but after proceeding for some 300 yards, I floundered into a thick reed-bed, and as this provided good shelter I decided to remain there until the moon got up. It was bitterly cold, and I had not the solace of a pipe, for I dare not strike a light, as that would, of course, be seen by any geese in the vicinity, causing them perhaps to put off their visit for some long time after the moon arose. Still, the half-hour spent thus was not wanting in excitement, for I anxiously gazed over the water in momentary expectation of seeing the flashes from the big guns of the puntsmen. At length they came, and with such startling suddenness did the bright streaks of fire pierce the gloom that, although looking out for them, they made me jump. Then there was a tremendous outcry amongst the geese, and soon I heard them trailing off in various directions. Some, by the increasing loudness of their clamour, I knew to be coming in my direction, whilst the notes of others, dying away in the distance, showed that they, wisely enough, sought safety in the opposite quarter. Both men, I knew, were provided with "cripple-stoppers," that is, small guns for despatching the winged and wounded ; but the fact that these were not brought into play proved that either it was too dark to see a wounded bird at any distance on the water, or that the shots had failed to score.

Soon afterwards, as the sky brightened and the moon appeared, I had other things to engage my attention, for geese then began to come on to the island. Almost before it was light enough to see birds in the air a small bunch of geese flew past my stand, and after one reconnoitring flight they settled within 200 yards of where I was kneeling. Ten minutes afterwards a goose-call came

from over the water, and in a few seconds I made out a black lump of birds coming right on to me. I could hear the measured "swish-swish" of their powerful wings as I put the gun to my shoulder and pulled the trigger. Two geese came with a crash into the reeds close at hand as I tried my hardest to get my feet dragged out of the yielding mud in time to turn and fire at a goose flying just overhead. It was a case of kill or miss, for the bird was certainly not more than 10 yards away, probably not so much, and I found to my sorrow that it was a miss, for the goose went cheerily on. As not a sound came from the two birds cut down by the first discharge, I concluded they were dead, so did not trouble to go after them, as more geese were then moving about in the distance.

As I had fully expected, the geese were keen to come on the island that night, and ten minutes later there came the clear call-notes from some more of these birds coming my way. This time a little string passed alongside my stand, offering a tolerably easy shot at not more than 30 yards' range, and, with their images clearly figuring against the fast-brightening horizon, I had no difficulty in securing a goose with each barrel. Four shots, four geese, and all dead apparently, was not bad for a start, and then I felt glad that I had not accompanied the punt-gunners. There was not, however, much time for reflecting on such matters, for the geese, now thoroughly aroused, were moving both up and down the river just off the island. Presently there came along a solitary goose, or rather gander, I thought him to be, judging from his hoarse note, which was uttered at regular intervals with all the precision of a metronome. I just caught a glimpse of this bird as he was passing on the

dark side of me, and, swinging the gun well forward as he was moving at a good rate and height, pulled trigger. It was plain that there was some miscalculation, or that the aim had been faulty, for the bird went on, for aught I could tell, with unruffled equanimity, giving out that clear call-note of his every hundred yards or so. This rather spoilt the average, but as I was there for sport, and not to make a record in the way of percentage of kills to cartridges expended, I felt in the best of spirits, and thoroughly enjoyed the outing. Still, the geese did not relax their efforts to get on to their sleeping-ground, for shortly afterwards a little party of four flew past just out of range. Having gone, probably, half-way up the island, they turned and came back towards me, but before coming in sight again they, as ill-luck would have it, settled not much more than 100 yards away. As I crouched down in the thick reed-bed I could distinctly hear their conversational notes, "grog, grog," and "sib, sib, sib." I thought how unfortunate it was that these geese had not thought well to come on just a little further. As it turned out they befriended me, however unwittingly, for a few minutes later a strong gaggle was heard coming my way, and this congregation, hearing the call-notes of their friends on the ground, were decoyed into coming past my stand, and so offering a splendid opportunity that I was not slow to take. Everything is fair in love, war, and goose-shooting, so, aiming right in the centre of the dense black mass of birds constituting the van of this gaggle, I sent 1¼ oz. of No. 1 shot hurtling amongst them. I distinctly heard three geese fall with a rousing smack on to the watery ooze just clear of my reed-bed before I gathered myself together for the final effort. By that time the geese had mounted higher in the

air, and it became necessary to carefully single out a bird, which also fell headlong to the mud. As it was hardly likely that the whole of this lot would prove to be dead, I quickly sallied forth to pick them up ; and well it was that I did so, for one winged bird led me a dance over the mud, and would undoubtedly have got clear away but for the fact that he got into a reed-bed, where I was able to quickly overtake him. Seizing him by the neck, I turned to retrace my steps, but found the light still so bad that I could not discover my former hiding-place, so, perforce, had to wait until the moon shone half-an-hour later. Then I recovered my bearings and sought diligently for my birds ; but the eighth defied all efforts for a long time, until at last it was found quite dead in a thick bunch of reeds into which it had fallen head first. This bird was not very far from where I had been kneeling, so I concluded that it must have been one of the first to have been killed.

Thereafter for fully half-an-hour nothing stirred, and I was thinking of giving it up for that night when I heard in the distance the "plop," "plop" of approaching footsteps over the watery ooze, and I knew that my kind-hearted friend the old gunner was coming to lend me a helping hand. On joining me he said that, hearing the firing, he thought I might want a little help with the birds. The moon was well up as we proceeded to the punts, and as we plodded painfully along in our heavy water-boots there came to us the cry of a goose from over the water. As it came nearer and nearer we crouched down in a little rill. My luck had not deserted me, for the goose came right over us, and although a good height up, the shot cut him down beautifully, and as he turned over and fell on his back my companion exclaimed, "Well,

that's a deader and no mistake." The old man refused to enlighten me as to the result of his shot at the geese earlier in the evening, simply remarking, "I will show ou when we get home." I knew then that he also had



PINK-FOOTED GEESE.

been successful, and was not so surprised to find twenty-one fine pink-footed geese laid out clean and trim on the cold stone floor of his back kitchen on our arrival. He remarked that he wished I had been with him instead of on the island, but I assured him that I was not of that mind, for I would with the shoulder-gun much rather

shoot nine geese that I could see, than twenty, or even twice twenty with the punt-gun that I could not see at the moment of firing. That shooting by guesswork in the dark is a phase of wild-fowling that I could never rightly appreciate.

Dummy decoys, although used by sportsmen a good deal on the big wheat-stubble fields of Dakota, Minnesota, and the Canadian North-West, seldom answer well for our grey geese. The large Canada geese more readily respond to the allurements of counterfeit presentations of the kind—which, be it remarked in passing, sometimes libel nature most atrociously—better than do our grey geese, for I have never found our birds take kindly to decoys, live or dead, in the full light of day. Decoys may, however, be of some service by occasionally causing passing geese to alter their line of flight, so as to get a closer inspection of these dummies, and this may, of course, sometimes give the carefully concealed gunner his opportunity.

In many inland situations I have found driving to be the best possible means for obtaining a shot at the grey geese. Before attempting this the gunner should make himself thoroughly acquainted with the daily habits and movements of the geese in his particular district. If the drive takes place in the morning the geese, likelier than not, will fly farther inland and away from their night haunts; whereas, if the afternoon is wearing away, the geese will surely make for their sleeping-grounds. Of course, strong wind is a factor that will determine the direction of their flight on first rising from their feeding-ground, but no effort on the part of the driver can long induce these birds to fly against wind when their inclinations impel them in some other direction.

With the aid of a driver or two I have now and again scored several highly pleasing double shots with 12-bore guns at these fine and wary grey geese. The heaviest shot I remember to have made inland was with a single 4-bore carrying $3\frac{1}{2}$ oz. of AA. shot. On this occasion I brought down five pink-footed geese that were driven past me at 96 yards' range—the distance being verified afterwards by means of a surveyor's chain. At that lengthy range I was surprised to find three of the geese cut down just as one sees partridges on driving days doubled up at 20 yards' distance; but this was fully accounted for on discovering that the penetrative force of the large shot had been sufficient to pierce completely the bodies of these heavy birds. I was applauding myself somewhat over the success of this shot as I proceeded to pick up the slain, but so soon as my Irish driver appeared on the scene a slightly different complexion was put upon the affair. This man, not long over from the wilds of Mayo, rushing up, breathless and intensely excited, proudly exclaimed: "Sure, your 'anner, an' isn't that the way to drive geese?" Naturally, I then realized that there might be two ways in which to regard the undertaking. Poor Patrick Morley, he drove me many geese thereafter, it being invariably recognized that he was the principal player in those acts.

The shooting of grey geese by night has always had peculiar fascination for me. I have sat for hours together in the reed-beds, or in a blind on a bleak muddy island out in a northern estuary, waiting for these fowl to come along. At such times the only sounds might possibly be the lapping of the ebbing tide or the "churr," "churr" of some belated dunlin. At length,

just perhaps when serious thoughts of giving it up for that night were entertained, there would be borne upon one's ears some of the most inspiring music the fowler can listen to—the harmonious chorus of a big gaggle of pink-footed geese. Then for a time there is alternation betwixt doubt and assurance as the sound rises and falls on the breeze, till at length all fears are allayed, the clear ringing cries of the geese wake up the sleeping echoes of that dreary waste, and a black mass of birds is seen swiftly oncoming.

Brent geese, as most wild-fowlers know full well, are exceptionally wide-awake fowl. So much so, in fact, that in mild weather it is well-nigh impossible either to stalk them with punt and big gun or to sail a boat within gun-shot of any respectable gathering of these wary fowl. Now and again, however, some of the smaller gaggles may be out-maneuvred, and occasionally it happens when sailing quickly up to geese on their seaward side that they refuse to be driven nearer to land, and, in consequence, some of the laggards cross the bows of the vessel at fair range, or offer, it may be, a longish shot as they break back and pass alongside on their way out to sea. Then is the gunner's opportunity, and one of the prettiest sights I know, in a sporting way, is to see brent geese neatly and cleanly stopped on these occasions with punt- or heavy shoulder-gun. When well on the wing these birds move fast; and to make a successful long shot at a single bird or a couple of geese under these conditions at once stamps the sportsman as no mean performer with the gun. Most of the shots so obtained are at 80 yards and over; and when it is remembered that the deck of a small sailing-boat, pitching on the waves, is not the steadiest

platform for shooting from, the inherent difficulties of the situation will be appreciated. I recollect being much dissatisfied with myself when I first tried to kill brent geese and other fowl under these conditions; but, as with other things, a greater or less amount of proficiency is to be acquired with practice, and the sea-going wild-fowler need not be discouraged by a want of success on his first attempt.

When the weather has been suitable I have, whilst sailing to fowl, made some highly satisfactory shooting with powerful 4- and 8-bore guns. Certainly thus to cruise about is a most charming feature of the sport, and this is not all, for, viewed from a purely practical standpoint, it is evident much ground may be covered in a day when sailing to fowl; therefore, in a general way, more shots will be obtained than would be possible when shore-walking. By this means, hundreds of brent geese, mallard, and other fowl may be found two or three miles out at sea, and in other situations where it would be impossible to venture with a punt.

Wild-fowlers desirous of avoiding some of the damp and dirty accompaniments of shooting from a punt may have a swivel-gun affixed in the bow of a fast sailing-boat or small yacht of light draught. They will thus be able to pursue fowl in the rougher waters and, by firing from these heavy guns a pound or more of shot, to greatly extend their killing range beyond the limit attainable by the heaviest shoulder-guns. It will be possible thus to obtain occasional shots at brent geese and the larger fowl in water so rough that the fowling-punt could not live therein five minutes. In this way a successful shot may result in a dozen or so of brent geese, mallard, or wigeon being bagged.

Unfortunately some keen wild-fowlers are so constituted that the heavy shock and recoil consequent on the firing of a full charge of black powder in an 8-bore or a 4-bore is attended with so much discomfort, and even pain, that they are entirely debarred from the use of such guns with full loads. To all such—and, probably, they are not in a minority—a change to certain of the newer forms of explosive will prove distinctly helpful, not alone



GROUP OF WILD GEESE.

in the matter of reduction of positive and pronounced discomforts, but also by adding to the enjoyment of their sport in another way. For instance, the smoke emitted on the explosion of a large charge of black powder frequently envelops the gunner in an impenetrable veil. Thus situated he must perforce wait some seconds while this clears away, and so is robbed of half the pleasure of his sport; for in the meantime the fowl are up and away, only killed and wounded being left. With powders com-

paratively smokeless the whole effect of the shot taken at long range can be noted. Thus, naturally, the gunner will derive far more enjoyment from his sport, and, moreover, frequently recover certain of his wounded birds that, not being smoke-hidden, cannot steal away and be lost to him. Suffice it to say, that whatever advantages or degree of comfort in sport the game-shooter finds accorded him by the use of a suitable nitro as against black powder, the wild-fowler will find proportionately magnified when using such powders in guns of large calibre. The strength and endurance of the wild-fowler are usually sufficiently taxed with the handling and firing of heavy shoulder-guns. Additional discomforts, therefore, in the form of needless smoke, flame, noise, shock, and recoil may well be dispensed with.

The selection of the most suitable sizes of shot for the various birds and distances he will shoot at is a consideration of vital importance to the wild-fowler. In the 12-bore No. 4 will be found sufficiently large for most purposes when following ducks. No. 3, however, has shot remarkably well in several of the larger 12-bores that I have used, and as this size seems to fit this bore excellently, wild-fowlers might do worse than try No. 3 for the longer shots which so often have to be taken on the open coast in the daytime. For flight-shooting, and all close-range work undertaken with the 12-bore, No. 5 will be found sufficiently heavy; for tougher fowl such as curlews and geese, a dose of No. 2 for the first-named, or of BB. for the latter, will frequently prove most effective in a 12-bore, and be the means of bagging fowl when smaller sizes would not answer.

In guns of wider bore the wild-fowler may look to obtain the best results with shot still larger in size. It

certainly appears somewhat of an injustice to place any size of shot smaller than No. 2 or No. 3 in a heavy 8-bore, throwing as its minimum charge 2 oz. of lead. In a general way I find that No. 1 of 104 pellets to the ounce is a size well suited to choked guns of this calibre, and as excellent shooting may be obtained therewith, this shot is to be recommended for daylight shooting. It is well, however, to bear in mind that the No. 1 shot of one English firm of shot manufacturers counts but 83 pellets or so to the ounce, whilst 1 oz. of the No. 1 issued by another establishment contains 104 pellets. Due regard to this fact, as, also, that there is some disparity of count noticeable with regard to other sizes bearing the same numeral, may prevent much confusion, particularly when gunners come to compare target results.

In 4-bores throwing 3 oz. of shot, No. 1 answers well for the general purposes of duck-shooting; whilst for heavier guns carrying $3\frac{1}{2}$ oz. or 4 oz., B. shot may frequently be substituted for this size with happy results. For goose-shooting with these guns it will be well to use shot ranging in size from BB. of 58 pellets per ounce up to AA. of 40 pellets per ounce. Wild-fowlers should always bear in mind the fact that certain sizes of shot suit some bores better than others. It is important that due attention should be paid to this matter, for at long ranges such as 80 yards, the shot flies none too thickly, and therefore it is imperative that the best shooting that is obtainable should be secured. There are usually some surprises in store whenever guns of this class are shot at long range. For example, I have noticed some guns throw a certain size of large shot admirably, but on using a smaller but unsuitable size, even though containing many more pellets in the charge, there was a marked falling off both in the

closeness and regularity of the pattern. For this and other reasons, a morning spent at the target will often prove to have been well spent and to have a marked effect upon the ultimate success of the gunner.

The SSG. and SSSG. sizes of mould shot I have found to be tolerably effective upon tough grey geese, provided care has been taken to insure the shot packing well in the gun employed. Most wild-fowl guns are choked, and the plan invariably adopted is to push a wad down into the choke or narrowest part of the bore ; then having discovered the size of mould shot which, resting on this wad, packs most evenly, the pellets comprising the charge of the size selected, are packed in similar layers within the cartridge. With a suitable charge of SSG. in a good gun I have cut down geese at distances where they would have remained unharmed by smaller shot. An ounce and a quarter or even $1\frac{1}{2}$ oz. of these slugs may thus be used with comfort and safety in a 12-bore gun ordinarily employed with $1\frac{1}{8}$ oz. charges of small shot.



CHAPTER XV

WILD-FOWL SHOOTING (*continued*)

DUCKS. PLOVER. SHORE BIRDS

WHERE wild-ducks are fairly plentiful, the sport of flight-shooting—the killing of these fine fowl on their evening and morning flight to and from their nocturnal feeding-grounds—possesses many attractions for the true wild-fowler. To make a bag of respectable proportions in this pursuit, a man must not only be skilled in the use of the gun, he must also shoot with judgment. The successful flight-shooter is endowed with keen eyesight, and ears that are ready to take in sound and quick to locate it. Most novices, and in fact all who shoot with indifferent success at evening flight, can usually hear wild-ducks as they fly past well enough ; all the same they seldom get a sight of the fowl, through inability to fix their position, until they are just about to disappear in the gloom. Then, of course, an effective shot cannot so well be made, or if it is, the birds are out of sight when falling, and many of them are not recovered. On the contrary, the practised fowler, on hearing the whistling of wild-ducks' pinions, can determine their position with such nicety that the moment the fowl come within view no time is lost in changing his position, for all is ready, and birds

are frequently struck by the shot before they are aware that an enemy is at hand.

In districts where ducks are much shot at during their flight time these birds become extremely wild, and, naturally, under such conditions the difficulties of the flight-shooter are proportionately increased. Two of the best bags of wild-duck that I know of were obtained in districts where the fowl are continually harassed, and they were made by men shooting with extremely heavy guns of large bore. The larger bag, twenty-eight fine mallard, was procured in Yorkshire by a man widely noted for his skill as a flight-shot ; and the circumstance was rendered the more remarkable from the fact that very small shot was used—No. 10, it was reported. As the gun carried something like $2\frac{1}{2}$ oz. of this in each barrel, it is not so surprising that ducks well within range could be brought down with such a cloud of shot.

The smaller bag was procured on one of the small islands off the coast of Essex. A double gun weighing $14\frac{1}{2}$ lb. might well be thought too much of a handful for any ordinary man to wield with success at flight time. But the man who used this extraordinary gun was of herculean build, having a 45-inch chest with arms and legs in proportion, and no superfluous flesh to encumber his movements. Neither did he stint the charge, for each barrel of this gun threw 3 oz. of shot, with a big dose of powder behind it to send it along. Nineteen ducks were shot on one occasion, fourteen on another, besides many similarly good bags all made under the difficult conditions ever presenting themselves in a locality much shot over. This sturdy flight-shooter, replying to my question as to the larger bag, remarked :

"The difficulty was not so much to shoot the ducks, as to get them home when shot, for I was alone and had about five miles to walk."

Wild-fowl resort to their favourite feeding-grounds with unfailing regularity, and from thence no ordinary amount of persecution at the hands of shore-shooter or inland wild-fowler can entirely drive them; although, as remarked, much shooting renders them extremely wary. It is the flight-shooter's first care to ascertain the position of such favourite spots, and this knowledge obtained, he may proceed to the enjoyment of some sport with the fowl with almost absolute certainty. Although few birds observe greater regularity with regard to the time and method of their flight, it is not alone to the wild-duck that we must look for sport at evening and morning flight. At certain times and seasons wigeon, pochard, wild geese, green plover, and curlew afford many favourable opportunities which the observant flight-shooter is not slow to seize upon. Inland-feeding fowl, such as certain of the grey geese, are remarkably methodical in their habits; and so too are the wigeon in many situations along the coast. Whilst lumping shots may now and again be made with the shoulder-gun into the close ranks of the dunbirds (local name for the pochard), as they rattle overhead on their way from some pond in the vicinity of the sea-coast.

In August the flight-shooter may spend many pleasant evenings with the ducks, but it is with the arrival of the foreign fowl in October that the more serious and enjoyable form of his sport commences. By that time the quarry, being fully fledged, and the young having acquired full strength, call for no mean display of skill

to bring them down. In order to waylay the fowl with a proper amount of success, it is of course necessary for the flight-shooter to be suitably armed. Not very many years ago the 10-bore was looked upon as the smallest size of gun of any practical value for wild-fowl shooting; now, however, the long-chambered 12-bores are much more frequently used. The charge of $1\frac{1}{4}$ oz. to $1\frac{1}{2}$ oz. of shot carried by 12-bores of 8 lb. weight is a quite different dose to use on a single duck, and shot numbered 5, 4, or 3 will answer most purposes of the duck-flighter. For geese larger sizes should be used, as recommended in the preceding chapter.

On the cultivated land in many marshland districts along our coasts a considerable acreage of beans is grown. This grain is a favourite food of the wild-duck, and numbers of these birds resort to the bean-stubbles to pick up the scattered grain after harvest. This is the wild-fowler's opportunity, for at such times the best of flight-shooting may be obtained. From certain quiet spots scores of ducks may be observed each evening fighting in the vicinity of these bean-stubbles, and having once accurately located their position, the lucky sportsman should not fail to make the best of his chances.

One October, not so very long ago, information reached me that ducks were using a certain bean-stubble. That same evening saw a keen wild-fowling friend and myself hidden away in the ditch on the leeward side of this field; and in the space of little more than half-an-hour, one gun had bagged five and the other seven and a half couples of fine fowl. The next night and the next found us at the same place, and although on each occasion the bag was somewhat

lighter than on the first evening, the sport still remained excellent. Sunday, intervening, gave the ducks a rest, but our sport was well up to the average on the Monday night, although the ducks were flying slightly higher. Still intent on making the best of our sport whilst so excellent an opportunity served, we again visited this bean-stubble on the Tuesday evening. There was then a marked falling-off in our sport, and for the following reason: The ducks had at length found out the danger of coming in to feed in the ordinary way, and displayed much cunning by coming in overhead out of gun-shot, and when directly over the stubble they would drop almost straight down to the ground and alight. Still, as the ducks came freely, we determined not to be outdone. We therefore had two pits dug in the best positions in the centre of their feeding-ground, and flight-time the next evening found us fixed up therein, all external evidences of this new move, in the shape of excavated soil and so forth, having first been carefully removed. We were not long in discovering that from such position the shooting was decidedly more difficult, for the ducks swooped down right atop of us, and so were sometimes quacking upon the ground before we could raise the gun to shoulder. Once or twice shots were obtained at birds before alighting, but the greater number were killed as they got up from the ground. Then, as they rose straight in the air on the light or western side of us, we could sight them plainly enough, but to the eastward of our position, with a background of dark sky, it was practically impossible to see the ducks.

Although in a general way the evening flight is most productive of sport, it does not always follow

that nothing is to be done in the morning. In a certain part where pochards, among other ducks, are fairly numerous, I well remember spending several days on one occasion trying to discover their line of flight. At length I was successful, and quite by accident. Coming home along the sea-wall one morning from a duckless quest, I met a fisherman. He was a stranger to me, but could of course see by my gun that I had been out for the early flight, and with the promptitude characteristic of his class, at once got to business. "They bards came right over me this morning, sir," he cheerfully remarked. "What birds?" I inquired. "They dunbards; there was a mighty big shuft of 'em down by the B. afore it came light this marnin'." This was precisely what I wanted to know, and having spent several mornings in the futile endeavour to hit off the line taken by these fowl, I gladly gave him a little reward for the information. The next morning, fully half-an-hour before daylight, I was down at the point indicated by the fisherman. It was still rather dark when I heard the rushing sound made by a big lot of pochards passing quickly through the air. I could just make out a dark mass of fowl, but they were too far away to risk a shot. Again I came away without firing a shot, and, although disappointed, I was not discouraged, but determined to try again on the following morning. A more formidable weapon than the 12-bore I had previously had with me was then taken, for on seeing the pochards flying in such numbers and so closely together, I decided to make the most of any chance which might offer by taking a double 8-bore. Early the next morning I concealed myself behind a gate-post, 100 yards or more from the sea-wall, but directly under the line of

flight of the fowl as taken on the previous morning. The grass was crisp and white with hoar-frost, and the cold gun-barrels made one's fingers sting and tingle even through thick gloves. Soon the rattling sound of the pochards' wings was borne to me upon the still morning air, and the gun was quickly raised and twice discharged at a thick bunch of fowl hustling past me. Then the sound of ducks striking the hard ground proclaimed the welcome fact that the $4\frac{1}{2}$ oz. of No. 2 poured from the two barrels had done its deadly work. Five of these ducks were picked up immediately, and on daylight coming two more were recovered by casting about along the line of flight of the surviving fowl. Seven fine pochards, in the pink of condition, amply rewarded me for having turned out at five o'clock for several consecutive mornings; but of course this happy result was clearly traceable to that most fortunate meeting with the fisherman on the bank.

Sometimes the most astonishing ignorance as to the habits and movements of wild-ducks is displayed by those having ample opportunities for knowing better. One November afternoon, about four o'clock, I was driving along a marshland road bound for a barley-stubble field, where on the previous evening I had killed two couples of duck, when I fell in with a tired sportsman just returning home. I had met this man at dinner at a friend's house a little while before, and on questioning him as to his sport, he told me that he had tramped those marshes for six hours or more in the hope of bagging a duck or two, and that he was then returning thoroughly disgusted, and with the firm conviction that there was not a duck within miles. He was much surprised on my telling him that he might

look for years for ducks in the daytime upon that particular spot without once having the opportunity to kill a couple, but that if he was inclined to accompany me, I should be happy to prove to him that he was leaving the ground just at the time when the ducks were most likely to come on the scene. He was soon beside me in the dogcart, and, as we were fortunate in the selection of stands that evening, my friend returned home highly elated with two and a half couples of ducks. He was already an enthusiastic and first-rate game-shot, and after that evening he became also an ardent and successful follower of the sport of duck-fighting.

Many people on the mere mention of duck-shooting conjure up visions of moonlight nights and long, cold vigils. That much waiting and moonlight nights are inseparably connected there can be no doubt, for with the aid of the light the fowl are placed in a position of much independence, as they can move about when and where they please, and so keep dropping in to their feeding-grounds at all times. On dark nights, however, the time of their flight is much more clearly defined, and the twenty minutes or half-hour of twilight will then certainly prove productive of sport provided ducks are abundant and a suitable stand has been chosen by the gunner. The peculiar fascinations of this sport, however, often draw men into lonely spots most difficult of access, and the getting away from such places on dark nights is the least pleasant part about the pastime.

Some years ago an old friend of mine was returning with me from flight-shooting on a particularly dark night, and whilst crossing a wide drain by means of a single slender plank, having a bundle of ducks in one hand

and his gun in the other, the spring of the plank caused him to miss his footing and take a veritable leap in the dark. Luckily, he was nearing the side, and so just managed to stick his toes into the farther bank, and so escape a bad ducking, which, truly, would have been a most unhappy ending to a successful evening's sport.

Wigeon-fighting is right merry work. Wherever the birds are plentiful, and access can be readily obtained to their feeding-grounds, the shore-shooter is certain to have some sport if he makes wise choice of a position. A hammerless gun with cartridge-ejecting mechanism will prove the quickest and handiest form of weapon for this sport, and the sportsman armed with a gun so easily and quickly manipulated will, all other things equal, obtain bigger bags of fowl at flight-time than will the man using a gun of slower movement. When wigeon are thoroughly on the move shots occur with frequency, and the energies of the gunner are sometimes severely taxed to take every fair shot that is presented.

A fully-choked gun is thought by many to be indispensably requisite to due success in duck-shooting. In flight-shooting, certainly, a close-shooting gun is too often out of place, however well it may suit for the general purposes of wild-fowl-shooting in the full light of day. Ducks at evening flight are frequently shot at no greater distance than 20 yards, and wigeon at even shorter ranges. I remember once meeting with a phenomenally successful flight-shooter in my rambles along the coast. This man was a villager who obtained a goodly portion of his living in winter by standing for the flight, morning and evening, at various suitable places down by the shore. He was head and shoulders above his competitors in the neighbourhood, both as regards ideas and armament.

He had even got a breech-loading gun, which was, of course, a move in the right direction, as it often secured him a shot when his rivals were slowly ramming down the charges in their obsolete weapons. One idle morning, after coming in from flight-shooting, I got the man to "plate" his gun, as I was curious to know in what manner it contributed to his success. As there was no appearance of choke in the barrels I did not look for very close patterns; still, I was not quite prepared for the shooting that was presented. Three shots from each barrel with some cartridges of my own containing loads of $1\frac{1}{8}$ oz. of No. 6 shot failed to produce higher averages than about 80 pellets on the 30-inch circle at 40 yards; whilst with cartridges loaded by the man himself, with harder and thinner wadding than mine, and with $1\frac{1}{4}$ oz. of No. 5 shot, the shooting was not so regular although the patterns displayed on the circle counted much the same. This more fully opened my eyes as to the amount of success achieved in practice with a gun throwing thin patterns. For those who shoot wild-fowl on flight and in the daytime, an excellent plan will be to have two pairs of barrels affixed to their guns—one pair fully choked for shooting in daylight, when long shots are the rule; and the other pair cylinder-bored to give much wider killing-circles for night-shooting when shots are obtained at short ranges.

The wild-duck is now a well-recognized quantity on many sporting estates in this country. It is well known that this bird is hardy and easy to rear, and now that it has been conclusively proved that wild-duck may be brought up to the guns and made to yield continuous sport of the highest order during the daytime, there is assuredly a greater future than ever before this fine sporting bird.

On certain estates—notably those of the Hon. Walter Rothschild in southern-central England, and of Sir Richard Graham in the extreme north of this country—thousands of wild-duck are now reared each year, and these wild-fowl afford the finest sport when driven over the guns in the daytime in much the same manner as are game-birds. Upon the estate last-named a bag exceeding 1100 wild-ducks was made on each of three consecutive days in October of 1902; at a later date in the same autumn these heavy totals were repeated on two or more days.

The Golden Plover is deservedly held in high estimation by the shooter, as it is capable of affording sport excellent in quality. Using a 12-bore gun and No. 5 shot, for golden plover require a good blow to bring them properly to earth, I have frequently made tolerably heavy bags whilst shooting these sharp-flying birds in certain of their favoured haunts. In one low-lying section of the country much intersected by dykes I have found huge congregations, several thousands strong, of golden and green plover feeding in company upon the clover and grass lands. Whilst following these birds in such situation good wading-boots of full length are indispensable, as frequently the only shelter the sportsman can find is down in the bottom of the ditches. Thus equipped, and with feet encased in the stockings proper for use with water-boots, he may stand for hours in water a foot or more deep without experiencing the slightest discomfort. Having thus the power to screen himself so effectually he may proceed to shoot the plover in the most effective manner possible, either by stalking them up the dykes, or by having them driven over him whilst thus concealed. Now and again shooting-butts are con-

structed in the heart of the best feeding-grounds of the plover. These may be fashioned of hurdles and straw or of rushes or other material to hand, and it is always advisable to have them fixed up some time before the coming of the plover in the autumn, for if the butts are erected whilst the plover are using the fields, the birds are extremely likely to give the screens a wide berth.

Most sportsmen acquainted with golden plover and their ways are aware that unwounded birds have the curious habit of dropping earthwards on being shot at. Old gunners know that a shot fired at golden plover passing high overhead out of range will frequently cause them to dart downwards within gunshot. It is a singular habit, and one wonders whether the report of the gun, or the whistling of the shot-pellets around them, causes the birds to act in this strange manner. Just at this moment I cannot recall similar behaviour on the part of other birds; indeed when flying singly, and perhaps also in pairs, golden plover do not appear to be so much addicted to this habit. Unwounded wild-ducks and many other kinds of fowl behave in quite contrary manner, for on being shot at whilst flying overhead they invariably rise almost perpendicularly in the air for several feet. The old flight-shooter frequently profits by this habit of the mallard, for he knows fully well that on missing with his first barrel he has but to steady himself a moment for the second shot in order to retrieve the initial error.

The Knot is capable of affording the shore-shooter excellent diversion at times. For one thing, this bird is, perhaps, more readily decoyed than most other shore birds, and thus it provides considerable sport for the shooter hidden away in the punt up some rill on the mud-flats, or for the coast-gunner ensconced in a care-

fully-dug pit well down on the green-shore. To blaze away into the brown, or rather the grey, of a flock of Knot with the punt-gun is not first-class sport; the better plan perhaps is to put up a few wooden decoys, adding to these a few of the dead birds made to stand erect and life-like by means of pointed sticks. The shooter armed with a double 12-bore will thus secure some most sporting shots as the Knot wheel round or hover over his decoys.

Delightfully varied sport may now and again result from a few hours spent in a pit. I fancy I can hear some of my readers exclaim, on seeing mention made of shooting from such place of concealment: "That must be miserably cold and dirty work." But really it is not necessarily so, for with proper drainage arrangements, a small bundle of straw to sit upon, and another to spread on the floor of the pit to prevent the mud and water churning into slush by the action of the feet when the shots are taken, few discomforts will be experienced by the suitably-clad sportsman whilst shooting from a pit. Properly equipped in wading-boots the discomforts attendant upon pit-shooting are not greater than will be encountered by the gunner whilst tramping the marsh, and certainly not so great as those frequently endured when one is laid in the bottom of a wet fowling-punt.

In some situations I have found Curlew to be procurable only by means of a pit dug well out upon the salt-marsh in their line of flight. After vainly trying to circumvent these wary fowl by stalking or by setting to them with the punt and big gun, it affords one infinite satisfaction to find them coming up well within shot of the pit. Under the circumstances a feeling of vengeance against these extremely wide-awake fowl may perhaps

be excusable, in any case it will afford peculiar pleasure to most gunners to take fair toll of these exasperating creatures in return for all past disappointments. Those who have not shot much at curlews should take care to use hard-driving guns and shot large enough; these heavy birds are pretty tough, and they take, as a rule, more killing than a wild-duck.

The month of October is a period of much excitement for all who love the wild life of the sea-shore. In that month is comprised the principal period of the autumnal migration, and fowl of all kinds, aquatic and non-aquatic, come from over the sea to complete the gunner's list of things shootable. From October onward to the commencement of winter the sportsman who hankers after variety may have his longings satisfied, for at any time he may come across grey geese of three or four different kinds, or brent or bernicle geese, pintail, wigeon, pochard, and a host of other foreign-bred fowl, besides strong-flying snipe and woodcock and other denizens of marsh or woodland. At such season a walk along shore reveals many curious sights, birds being found in many unlikely situations. Woodcock jump up unexpectedly from some little patch of covert at the foot of the sea-wall—possibly from small tufts of sun-dried grass wherein one might expect to find nothing much larger than a mouse concealed—whilst new arrivals in the shape of inexperienced wigeon, brents, and the like, may be come upon in situations much more accessible to the gunner than the later-acquired wariness of these fowl will permit them to reside in. Then of course is the time for making a bag which for variety, if for naught else, is seldom to be beaten.

At such times the shore-shooter will by no means

shoot without due discrimination. It goes without saying that he will not care to bag very many of the small wading fowl, any more than he would wish to slay the cormorants, guillemots, razor-bills, puffins, loons, grebes, and other diving fish-eating fowl that are abundant just off the coasts in the autumn. At this time of the year I have sometimes shot birds not frequently observed—spotted redshanks, grey phalarope, quail and others. Quail, be it observed, are oftenest met with by partridge-shooters in September, but the quail referred to above were, however, killed on the sea-shore in mid-October.

Those unacquainted with coast-shooting in October will, on trying it, probably be astonished at the remarkable variety of bird life then abounding. The different call-notes and cries of some of the birds, coupled with their strange appearance and manner of flight cannot fail to attract attention. The 'longshore pedestrian may hear the occasional wild chatter of the fieldfare and ring-ouzel, the clang of passing grey geese, or the deeper-toned grunting call of the brents, the musical high-pitched whistle of the wigeon ; whilst the twitter of innumerable migratory larks and other small birds will sound in his ears from day-dawn to evening twilight. Diminutive golden-crested wrens, reminding one of much-magnified bumble-bees, will flit about by the score amidst the clumps of marram-grass and stunted buckthorn. Long-shanked godwits may be observed stalking about on the mud-flats, probably in situations where they may be easily stalked and shot, whilst whole battalions of shore- and water-fowl of various sorts ceaselessly clamour and shift about down by the edge of the tide, the whole forming a picture never to be met with save in such situations and at that particular season.

On turning out before daylight on the first morning of one of my October visits to the coast, I had in the short space of half-an-hour or so before the call or, rather, whistle came for breakfast the following bit of sport : First, a right and left at geese (white-fronted) flying close overhead in the grey light ; next, a shot at a woodcock getting up 10 yards away from me in the thick marram-grass ; then several snaps at the remarkably active and elusive rabbits dodging away through this same thick shelter ; and, finally, a long but successful stalk after a godwit settled not more than 60 yards away from the room in which, a few minutes later, I was busy discussing one of those famous, big north-country breakfasts.

Naturally amid such surroundings the shore-shooter will do well to equip himself with two or three different kinds of cartridge. Thus, for example, he may take a few loaded with No. 1 shot for the killing of any stray geese or other large birds that may be encountered ; other cartridges with Nos. 3 or 4 shot for ducks, curlew, and the like ; whilst for knot, godwit, plover, and the smaller birds Nos. 5 or 6 will answer. Gunners generally carry a gun of moderate proportions when on a shore-shooting expedition, a 12-bore carrying $1\frac{1}{4}$ oz. of shot usually answering most requirements of the situation.

For the suitably clothed and fairly robust sportsman there is no more health-giving pursuit than that of shore-shooting. Many people are under the impression that to follow this particular sport one must be endowed with a cast-iron constitution and strength well-nigh super-human to withstand the strain and exposure which they imagine is the inseparable portion of all who venture to go wild-fowling. Happily, however, one needs no lengthy experience to thoroughly convince as to the fallacy of

such supposition. Personally, I find greater risk of catching colds, influenza, and the like, amidst the smoke and fog-laden atmosphere, in the stuffy overcrowded carriages, ill-ventilated rooms, and the general conditions of every-day life in the metropolis or other of our big cities, than I do whilst facing the wild rough winds, the snow and frost of the sea-coasts. It will, doubtless, be safe to assert that one genuine London fog of the pea-soupy order is more prolific of fatalities than years of exposure to the boisterous winter weather of the sea-shore.

Shore-shooters will do well to remember that the rights of all owning property contiguous to the foreshore should receive due respect. Coast-gunners, it must be admitted, get something for nothing, and they should strictly conform to all proper regulations and by-laws—as citizens they undoubtedly possess certain rights and privileges, and equally as good citizens they will, in turn, respect the just rights of others. It is to be regretted that certain shore-shooters, here and there, have permitted their zeal in quest of sport to over-run their discretion. Some to the extent of trespassing upon land where they had no right to be; whilst others, perhaps, have offended by shooting hares and rabbits on the saltings, or both these and partridges along the sea-wall. I can name one or two places where the “locals,” watching their opportunity, lie in wait for the spring-tides to drive ground game off the saltings. Hares and rabbits thus occupied in escaping from the insidious danger in their rear run more or less blindly into that lurking ahead, and so fall an easy prey to these gentry. Such practices are most reprehensible, and no true sportsman will countenance them for one moment.

Malpractices of the sort assuredly tend to bring the sport of shore-shooting into disrepute, and they should at all times be decried. They act as a barrier to true sport by impelling landowners to refuse to coast-gunners such privileges as would otherwise be freely granted.



ROCKDOVE.

SECTION V

CHAPTER XVI

VERMIN : FURRED AND FEATHERED

THE attention of all intimately connected with the preservation of game is frequently concentrated upon that vital question—the destruction of vermin. The following remarks bearing upon certain characteristics of the winged and ground pests whose depredations are to be guarded against may therefore be appreciated.

The close of the game-shooting season frees the hands of the gamekeeper and enables him to give increased attention to the killing of the vermin upon his beat. It is of the highest possible importance that this work should be taken in hand as soon as possible in the year, for by putting it off much may be lost and little gained. Some gamekeepers—especially those receiving a fixed sum per head for vermin killed—may be inclined to reserve a portion of their energies until the breeding season, when, as is well known, even the wildest and most wary enemies of the game-preserver cast aside a good deal of their habitual caution, and are then more easy to circumvent. At that season, of course, a bigger show of these miscreants may be nailed upon the vermin-poles, the sum-total of kills being swelled fourfold, perhaps, by the addition of the young. Still it must not be

forgotten that delays are dangerous, and that in the case of unmitigated pests such as crow and sparrowhawk, magpie and stoat, the longer they live the more harm they do.

There are, it is well to remember, vermin and vermin. Certain of these predaceous creatures are absolutely and entirely harmful, and, as far as game-preserving is concerned, they have not a single redeeming characteristic. As coming within this category, the crows, grey and black, the magpie and jay among birds; and the poaching house-cat, the polecat, stoat, weasel, and rat among quadrupeds, may be specified as being most widely destructive. Other enemies to good game-preservation there are, but some of these, as for instance the kestrel hawk and certain of the owls, undoubtedly do a considerable amount of good, and so do not merit ruthless extermination. Other creatures formerly occupied exceedingly prominent positions on the game-keeper's black list; amongst these raven, peregrine falcon, harriers (3), buzzards (3), goshawk, badger, beech-marten, pine-marten, and wild-cat are now far from common, some, in fact, being practically extinct.

WINGED VERMIN.

THE CARRION CROW, *Corvus corone*, assuredly is one of the worst enemies that the keeper has to contend with, and partridges' and pheasants' nests are well concealed that are secure from this bird's remarkably acute vision. Carrion crows rarely form nesting colonies in the same way as rooks, they preferring to lead a somewhat solitary existence, usually going about in single pairs, winter and summer. Old hands generally adopt

one or other of the following methods for ridding their game-coverts of these and certain other egg-stealing birds. One plan is to lure the crows within gun-range by placing carrion in the form of a dead sheep, a hare, or what not, in some position whence it may be covered by a well-concealed gunner. Failing a secure ambush, the bait may have traps concealed around it.

Another plan sometimes answering well in other situations where the gun may be employed is the tethering of a cat, or a ferret, in some fairly conspicuous position where the concealed shooter has full chance to secure a shot either as the crows swoop down at the lure, or as they sit and pour out their wrath in horse croakings from the topmost boughs of some tree close at hand. Some gamekeepers use the device of baiting a trap with eggs; but perhaps the most deadly method of all, and one that at all times must be resorted to with utmost circumspection, is the placing of poisoned eggs—usually impregnated with 5 grs. or so of strychnine—in some safe and elevated position, such, for example, as the fork of a tree, in the haunt of the crow.

A last resource for dealing death to the crow is the shooting of both old birds as they come to or leave the nest; or on failing to secure both by these means, which, by the way, will be more than probable, to at least secure one by blowing up bird, eggs and nest when the process of incubation is well advanced. It must be borne in mind when attempting this that crows' nests are massively built of strong sticks, and unless a close-shooting gun with large shot, or a wire-cartridge is used, the sitting bird may escape unharmed. This remark applies with almost equal force to the nests of magpie and sparrowhawk, the former invariably a solid structure, the latter

a very thick platform which often has for foundation the old nest of crow or owl.

THE HOODED CROW, *Corvus cornix*, frequently termed "grey-back," "grey crow," "Danish crow," etc., is merely a winter visitor to England, but nests in Scotland, where it effects considerable damage among red grouse, black game and other game-birds. This bird is a most voracious feeder, and by a judicious display of carrion or other tempting food in the way of entrails, liver, and so forth, it may generally be enticed so effectively as to be captured by means of gun or trap.

THE ROOK, *Corvus frugilegus*. Whether it is that the fact has hitherto passed unnoticed—which scarcely seems likely—or that it previously remained unchronicled, I cannot say, but certain it is that until recent times little has been said respecting the strongly-developed egg-stealing tendency of the rook. Formerly it was the farmer alone who grumbled at this bird's depredations; now, however, game-preservers in several districts are up in arms against the rook, with the result that many a rookery has had its numbers considerably reduced. By reason of long usage through remote ages the rook has established a thoroughly good claim to the hospitality extended in granting it, for building purposes, the free use of certain trees around the homestead. But, sentimental reasons aside, this hospitality is so frequently and flagrantly abused that in self-defence one must now and again take relentless measures for keeping the depredations of these creatures within due bounds. It may be borne in mind by those who argue that the rook does some good to the agriculturist by clearing off grubs, etc., that even in this respect the pheasant will give the rook a lot of start and a most thorough beating. Where, for

instance, is the rook that can boast of such record as that pheasant which after shooting was found to have stowed away in his crop no less than 1200 wire-worms?

THE MAGPIE, *Pica caudata*, notwithstanding ceaseless persecution, still contrives to hold its own fairly well in some districts. It is sad to reflect that birds and quadrupeds so handsome of form or plumage, and so interesting in habit, should have developed tastes so entirely antagonistic to the interests of mankind. Yet, so it is, and magpie and jay, marten and stoat, along with other beautiful and extremely interesting creatures, having earned for themselves the ignominious title "vermin" by ceaselessly preying upon the food of man, now require to have a check placed upon their depredations.

THE JACKDAW, *Corvus monedula*. Although not so strictly a field and woodland resident as the rest of his genus, he preferring to haunt church towers, old ruins, and the chimneys of high buildings in great measure, Master Jack sometimes requires to be looked after pretty closely, as undoubtedly he will pilfer the eggs of the game-birds given the opportunity.

THE JAY, *Garrulus glandarius*. This handsome and interesting bird is perhaps scarcely so destructive as the magpie. It is, however, justly accused of killing young partridges and pheasants and of sucking eggs. It must, in consequence, be kept well under by gamekeepers. To this end shooting and various forms of trapping commend themselves. The jay is scarcely likely to suffer extermination in England yet awhile by reason of the influx of continental birds in the autumn, some of which migrant birds, it is probable, remain here in the spring for nesting.

THE SPARROW-HAWK, *Accipiter nisus*, is generally recognized as being one of the most dangerous enemies to young game. It is fairly common in most districts, the supply being kept up by birds nesting in the rougher and wilder parts of the country wherein game is not so



RINGDOVES.

closely preserved. The fixing of small fish-hooks in the body of some dead bird has been recommended as useful in effecting the capture of this and certain other hawks and buzzards. The hooks are to be fixed with points towards the tail of the bait, round which four or more traps are set, and into one of which the captive almost certainly plunges whilst endeavouring to free itself from

the hook. Here too the gun may be employed, and, if left so late, both old birds may be shot as they come to feed their young on the nest. Then after their demise the killing of the young birds effectually encompasses the destruction of the whole family, and rids many a pheasant or partridge mother of some most dreaded enemies.

As previously remarked, Raven, Kite, Buzzards, Peregrine Falcon, Harriers, and Goshawk are now so rare in most districts where game is extensively preserved that they seldom enter into the calculations of many keepers. In those places where the destructive tendencies of these birds strictly need attention, the thinning-out process may be well effected by trapping, or perhaps by means of the gun.

GROUND VERMIN.

At first blush it might appear to some that by reason of their powers of flight, crow, hawk, and falcon are much better fitted to outlive a war of extermination than are the four-footed pests of the partridge-manor and the pheasant-covert. To a great extent, however, such supposition would be erroneous. Certainly, winged vermin of the sort indicated possess in remarkable degree the ability to promptly and effectively rid themselves of man's presence ; still, it must be remembered that in all members of the weasel tribe, the senses of sight, smelling, and hearing are extraordinarily developed, and that such activity and strength as they display are seldom to be found in like proportionate degree in animals of greater size.

THE FOX, *Canis vulpes*. No one having a true

acquaintance with the habits and characteristics of the fox in a state of nature should have the hardihood to aver that this animal does no harm to game. Such haphazard assertion will do the foxhunter's cause little good, for, most assuredly, the fox does harm, and at times his depredations may prove truly exasperating to the game-preserved. On the principle of live and let live, of give and take in the matter of our sports, annoyances of the kind should be largely tolerated by game-preserveds in districts where the fox is regularly and effectively hunted. On the other hand, the fox-hunter should remember that the "take" is mostly on his side and the "give" on that of the covert-owner. The latter will do well to bear in mind that one of his surest safeguards as against any serious damage from foxes, is the keeping up a goodly stock of rabbits, these rodents forming a favourite food of the fox.

There are certain places in Great Britain where it is permissible, or, in the interests of game-preservation, even imperative, to kill foxes. Such places may, for instance, be found in several hilly fastnesses in Wales and in Scotland. There the hunting of foxes by orthodox means is totally impracticable, owing to the nature of the ground, or to the extreme density or extent of the coverts or natural shelter afforded these animals. In such situations gun and trap are the safest and most effective means to employ in the thinning out of the superabundant foxes.

THE OTTER, *Lutra vulgaris*. The natural food of this shy and retiring animal is fish. It gives little trouble to the gamekeeper, whose sole charge is the winged and ground game upon an estate, and he, therefore, may well leave the otters upon his beat to the

tender care of the otter-hunt, should such pack of hounds exist in his locality.

THE BADGER, *Meles taxus*. Although not nearly so valuable an animal of the chase as are fox and otter, the badger may be tolerated for several reasons. In the first place, badgers are not sufficiently numerous generally to give the gamekeeper much cause for anxiety on account of the harm they may do. The badger lives in deep burrows in the innermost recesses of the woods, and although known on occasion to take the eggs or the young of game, it relies in great measure upon vegetable substances for its subsistence. Brock is an old-time country name for the badger; and in some districts it is known as "grey," and in others as "baw-sened-pate"—the term bawsened, *i. e.* striped with white, bearing reference to the distinctive patches of white on the animal's head.

THE BEECH MARTEN, *Martes foina*, goes also by the name Stone Marten. This marten was at one time commonly met with in the southern parts of the island, but half a century's out-rooting of most forms of animal life at all injurious to game has caused this interesting but highly-destructive creature to be well-nigh if not wholly exterminated. The beech marten preys upon small animals, as also upon birds, their eggs and young. It is a rather formidable creature, being about 30 in. long, and is most agile, and extremely difficult to capture except by strategy. It may be distinguished from the one other British marten by its white throat, and on this account it is sometimes styled White-throated Marten.

THE PINE MARTEN, *Martes abietum*, is still found in the pine-clad and hilly districts in North-west England,

and in some parts of Scotland. Its length is slightly greater than that of the southern marten, from which it may be distinguished by its yellow throat. Like the last-named animal, it spends a good portion of its existence in trees, which it climbs with utmost facility.

Trapping is usually resorted to for getting rid of these remarkably wild and greatly destructive animals. In certain localities, the Cumberland fells in particular, martens are hunted with terriers, or in some instances with hounds of larger growth. Although fast and furious while it lasts, the excitement attendant upon these runs after marten is, like the proverbial donkey's gallop, too short-lived, for the marten, usually, very soon runs to ground, from whence he is ejected, by smoking out or other ready method, and promptly despatched.

THE POLECAT, *Mustela putorius*, also called Fitchet, and Foumart, the latter probably a shortening of Foulmarten, a title well earned by reason of the particularly evil odour given off by its body. The foumart, the largest of our true weasels, is still found in the wilder and least accessible parts of the country. In certain parts of Wales it is far from uncommon, but in England it is fast becoming a rarity. In certain secluded spots in the Fen country polecats have recently been killed. Its ravages are justly dreaded by the game-preserve, nothing in the form of small game being safe from the attack of this most bloodthirsty and voracious creature. In common with the rest of the weasels, the polecat evinces the vicious propensity of killing merely to gratify its insatiable lust for blood. Wherever permitted to obtain entry into the pheasantry or poultry farm, death and destruction will follow in its track, a

dozen or more head of game being sometimes killed in a single visit.

THE STOAT, *Mustela erminea*, is the true ermine-weasel. In certain northern districts it is called club-tail, from the ever-present and conspicuous black tuft at the end of its tail. In severe winters the stoat assumes a coat in harmony with its environment, more or less white being displayed according to the severity of the climate. Sometimes the animal presents a piebald appearance of brown and white, particularly in the southern parts of Britain, farther north it turns wholly white, save for the black tail-tip which, as remarked, is always present.

Although shy and retiring to a degree, the stoat's bump of inquisitiveness is, nevertheless, fully developed, and for the benefit of those who may be unaware of this fact, I will venture to offer a hint as to the following dodge which I have frequently found most effectual in encompassing the destruction of these alert animals. Now and again whilst the sportsman is quietly engaged in picking off a few young rabbits as they come out to feed on a summer's evening ; or, it may be, when posted behind a fence waiting for driven partridges to come over ; or, again, whilst similarly positioned by the covert-side in pheasant-shooting, he may be suddenly startled by the appearance of a stoat. On seeing him the affrighted little beast bounces back into the thick undergrowth too quickly probably to allow of an extremely hasty shot being taken, and with this sudden disappearance those unaware of the stoat's inquisitiveness may possibly imagine the incident to be closed so far as they are concerned. Not so the old hand, for he quietly places gun to shoulder, and covers

the spot whence the stoat vanished from sight. In a second or two, as likely as not, if not overmuch scared, the white waistcoat of Mr. Stoat comes into view again, but if this does not occur he may generally be induced to take another peep, provided the intruder upon his happy hunting-ground will imitate the squealing of a rabbit, a noise quite easy to make with the lips, and which is commonly used as a call when enticing a sluggish ferret to leave a rabbit's burrow. Then on reappearing the stoat has not time to see and retrieve his mistake before a charge of shot stretches him out. In this way I have killed many stoats; but it is essential that the gun should be at the shoulder, for the act of raising and aiming it would fully alarm the stoat, and in all probability give him time to slip out of harm's way.

THE WEASEL, *Mustela vulgaris*, is too well known to need much description. These active pests of the partridge-manor and the pheasant-covert—the stoat more particularly than the weasel—require to be kept down to the smallest possible limits by every means at the keeper's disposal. To accomplish this all known forms of trapping must be employed. The deadfall trap with figure of 4 trigger, the box-trap, as also the spring steel-trap, may in these cases be used with satisfactory results.

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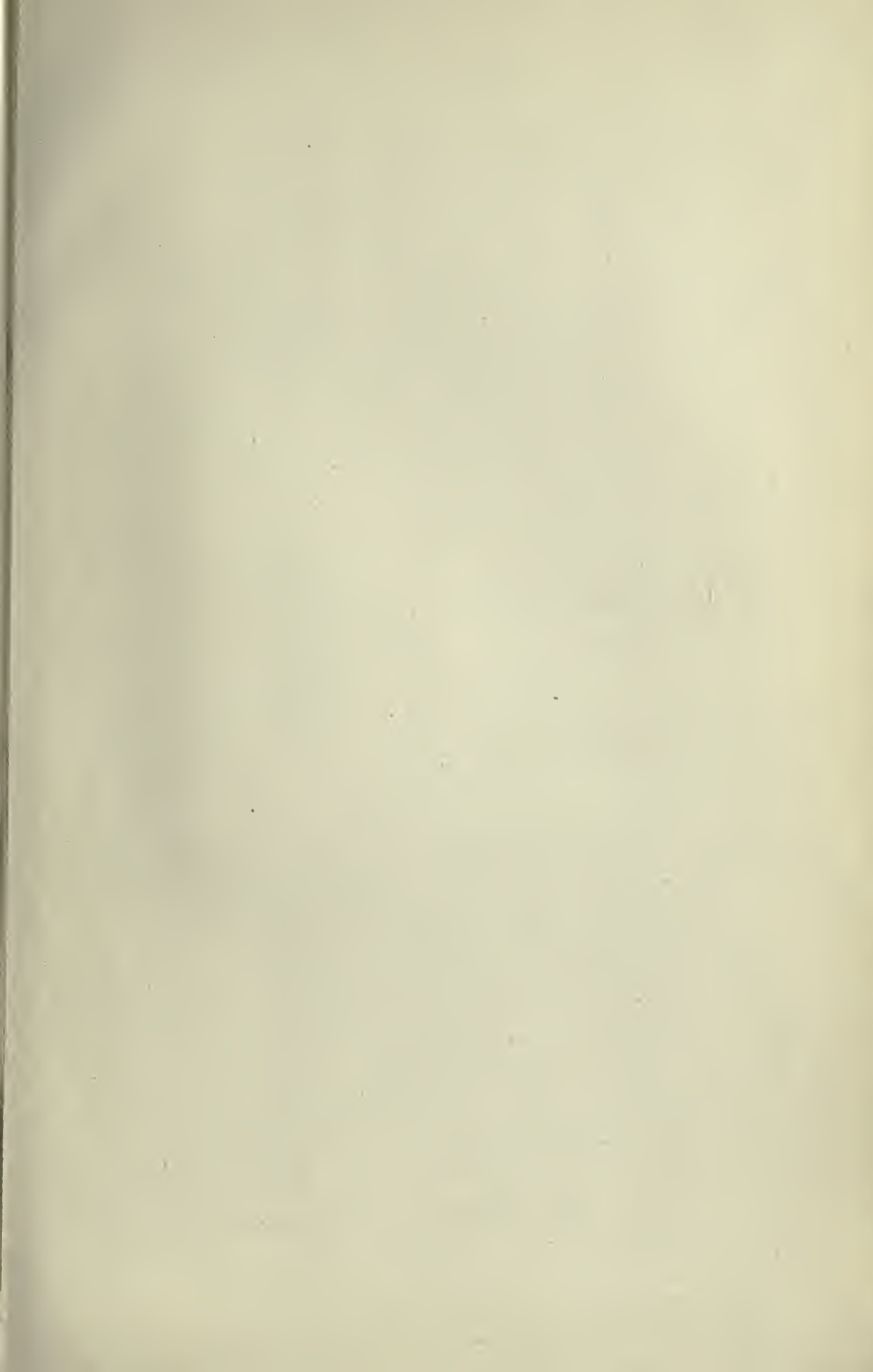
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